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D. T. LAKDAWALA

R. BALAKRISHNA P. R. BRAHMANAND

I ARTICLES

RISK, INCENTIVE AND THE TECHNIQUE OF LOW-INCOME FARMER	RICHARD C. PORTER	1
MONETARY POLICY IN AN INFLATIONARY ECONOMY	MANMOHAN SINGH	28
MONEY, BANKING AND CREDIT IN NEW ZEALAND	HRISHIKESH N. PATHAK	44
NATIONALISATION OF BROADCASTING IN INDIA	J. V. S. RAMASASTRI	62
BANK FINANCING OF CONSUMER INSTALMENT CREDIT	KERSI D. DOODHA	74

II REVIEWS (For List of Books Reviewed see inside cover) 94

III NOTES

Population Growth vs. Economic Growth	BRIGHT SINGH	113
A Note on Hirschman's Concept and Strategy of Development	K. H. THANAWALLA	123

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REVIEWS

Abbot, J. C.	*Marketing Problems and Improvement Programs.*	Z. Y. JASDANWALA	94
Dhar, P. N.	*Small-Scale Industries in Delhi.*	J. C. SANDESARA	96
Eckstein, Otto	*Water-Resource Development : Economics of Project Evaluation*	K. SUBRAMANYAM	99
Krutilla & Eckstein, Otto	*Multiple Purpose of River Development.*		
N. C. A. E. R., New Delhi	*Criteria for Fixation of Water Rates and Selection of Irrigation Projects.*		
Mookerjee, S.	*Factor Endowments and International Trade.*	R. BHARADWAJ	102
Nerlove, Marc	*The Dynamics of Supply : Estimate of farmers' Response to Price.*	RICHARD C. PORTER	104
Strayer, Baul	*Fiscal Policy and Politics.*	V. T. MATHEW	106
U. N. O.	*Training for Social Work.*	P. H. CABINETMAKER	109
U. N. O.	*The Ageing of Populations and its Economic and Social Implications.*	R. M. SUNDRUM	110

RR
Replace.
Central Stores
1-2-63
Replace.

HC
431
.I39

THE INDIAN ECONOMIC JOURNAL

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RISK, INCENTIVE, AND THE TECHNIQUE OF THE LOW-INCOME FARMER*

UNCERTAINTY is a particularly critical element in the decision-making process of a farmer, and the usual economic theories of production and supply, with their assumptions of economic certainty, cannot always be profitably applied. Awareness of this fact in the literature on Indian agriculture is indicated by the growing body of discussion of the effects of price-stabilization and of measures to reduce the farmer's dependence upon the vagaries of rain, sun and season. But this literature has thus far evolved from general observation of the Indian farmer and from study of aggregated data—useful perhaps, but rigorous at neither the theoretical nor statistical level. The purpose of this paper is to advance a theory of the low-income farmer's behaviour under various conditions of uncertainty, and to deduce the effects of price and tax incentives and price-stabilisation schemes.

Even among low-income farmers, there is an essential distinction between " subsistence " and " above-subsistence " farmers. The former has so small a net yield that he can afford to market little, if any, of his crop, while the latter is able to market a significant portion of his output in order to purchase non-village-produced goods. Even within the group of "above-subsistence" farmers, a further breakdown is possible, for some may be " backward " in the sense that their wants for non-village-produced goods are sufficiently limited as to allow complete satiation with less than a bumper crop (the excess disappearing into hoards or intra-village consumption). Since the farmer who is " above-subsistence " but not " backward " is most likely to be first to try new methods of cultivation in the village, it is to his technique, and changes in it, that our attention is directed.

The word " technique " will be used in its broadest sense—as the quantity and kind of capital applied (i.e. seeds, fertilizers, etc.) as well as

* My interest in this topic arose out of a seminar conducted by Gale Johnson at the University of Bombay in September, 1958. For comments on earlier drafts I am indebted to my colleagues at Bombay, V. S. Vyas, and P. R. Brahmanand, and at Yale, J. Tobin and S. Q. Lepper; but I am of course responsible for all errors that remain.

the manner of application of that capital and its co-operating labor. While this definition is very broad and makes no effort to specify a production function, a more narrow construction is not necessary for our purposes.

I

By a farmer is here meant the members of a family (or families) who act as a unit in making production and consumption decisions and who derive their entire livelihood from agriculture. These members are many relative to the size of their (owned or rented) land and so, given their choice of crop and technique are easily able to supply all the labor needed to maximise the expected yield. In other words, the quantity of labor is not effectively chosen by the farmer since it is always applied up to the point where its marginal product is zero; thus, no labor-leisure decisions need be made and no outside labor hired.[1] For simplicitly, it is assumed that all cultivation expenditures, rent, taxes, and/or interest on past debts are fixed and paid in kind after the harvest and merely reduce the size of the expected net yield[2]; to the extent that any of these are dependent upon the size of the crop, the variance of the net yield is also reduced.

An above-susbsistence farmer disposes of his output (net of rent, interest, etc.) partly by consuming it himself, partly by bartering within his village for various village-produced goods and services, and partly by marketing the crop in order to purchase non-village-produced goods. (It is the existence of this marketable surplus which differentiates the above-subsistence from the subsistence farmer.) The above-subsistence farmer will consider the marketed portion of his output as a residual[3]—biology, habit, and tradition rather narrowly define the amount of his food consumption and intra-village barter. Here the strong assumption is made that the desired level of consumption in these two categories is fixed and that the farmer gains no satisfaction (comparable to that of manufactured goods)from consumption greater than this amount. Thus, the above-subsistence farmer always markets the (always positive) difference between his net output and his fixed own-plus-village requirements. In other words, his utility function can be represented simply by:

$$U = U(M) \tag{1}$$

[1] This latter assumption is not strictly necessary, but it permits us to neglect the market orientation which the payment of money wages creates. Should the family be so small as to require occasional help (as, for example, at harvest), then it may be assumed that such labor is paid in kind, the expected net yield being accordingly reduced.

[2] This assumption is relaxed in Section VI.

[3] Unlike the subsistence farmer who may market a small portion of his output to satisfy his basic needs for non-village-produced goods and who then considers his food consumption as a residual.

where U is his utility and M is the quantity he consumes of non-village-produced goods (i.e., *M*anufactured goods). More complete justification of this assumption is offered in the Appendix.

Two parenthetical comments on this utility function. First, the possibility of changing relative prices and quantities among different agricultural and village-produced goods and among different non-village-produced goods is neglected throughout the paper, although changing relative prices *between* these two groups will be considered. Thus, each of the two categories, own-plus-village consumption (labelled A for *A*gricultural goods) and non-village-produced goods (M), may be treated as homogeneous items. Clearly, from the nature of the function (1), shifts in his consumption pattern between these goods as a result of changing relative prices cannot occur.[4] Second, utility function (1) is assumed cardinally measurable,[5] but any linear transformation is permitted, so that the question of the amount of " utility " derived when M is zero need not arise. The usual assumption of diminishing utility from increments of M is made.[6]

The amount of non-village-produced goods which the farmer is able to consume is given by :

$$M = p(X - A) \tag{2}$$

where X is the farmer's net output and p is the ratio of agricultural prices to the prices of non-village-produced goods (i.e., of A to M).

The essential elements of the uncertainty facing the farmer are now apparent. At the time of planting, when at least a large portion of his decisions concerning technique must be made, the farmer cannot be sure of: (1) the price ratio, p, which will determine the quantity of M he will be able to purchase with a given sale of output; and (2) the quantity of net output, X, which his productive efforts will yield. Each of these must now be examined more carefully.

Insofar as the relative prices, p, play a role in determining the farmer's choice of technique (and, as we shall see, they do), he must make some estimate of harvest prices even before the time of planting. It is assumed that he recognizes p to be intrinsically unknowable but considers it to be governed by some probability distribution such that—

$$p = \mu_p + z_p \sigma_p \tag{3}$$

[4] There is some discussion of this in Section V.

[5] In a special sense ; see W. J. Baumol, " The Cardinal Utility which is Ordinal," *Economic Journal*, Vol. 68, No. 272 (Dec. 1958), pp. 665-672.

[6] That is, that dU/dM, or U', is positive and d^2U/dM^2, or U'', is negative. The level of U is arbitrary and irrelevant.

where μ_p is the (subjectively anticipated) mean value of the price ratio, σ_p its (anticipated) standard deviation, and z_p a random variable distributed by $f_p(z_p)$ with zero mean and unit variance.[7] Since the farmer in an underdeveloped country generally has little, if any, current market information, his estimates of μ_p and σ_p must be largely derived from his historical experience.

Similarly, the farmer may consider $(X - A)$ as a random variable such that

$$X - A = \mu_x + z_x \sigma_x \tag{4}$$

where μ_x is the (anticipated) mean marketable surplus (i.e., output net of all costs, rents, taxes, interest payments, *and* own-plus-village consumption), σ_x the (anticipated) standard deviation of marketable surplus, and z_x distributed by $f_x(z_x)$ with zero mean and unit variance.[8]

The utility function (1) may now be rewritten as follows:

$$U = U(M) = U\left[(\mu_p + z_p \sigma_p)(\mu_x + z_x \sigma_x)\right] \tag{5}$$

It will be noted that utility function (5) depends, among other things, upon the random variables, z_p and z_x. It has been shown that, on the basis of certain postulates, a person choosing among probability distributions will act so as to maximize the expected value of his utility.[9] The expected value of utility function (5), $E(U)$, is

$$E(U) = \int_{z_x} \int_{z_p} U\left[(\mu_p + z_p \sigma_p)(\mu_x + z_x \sigma_x)\right] f_x(z_x) f_p(z_p)\, dz_x\, dz_p \tag{6}$$

where the integrals are over the entire range of z_p and z_x[10].

Before proceeding, however, we must look further at the farmer's uncertainty about marketable surplus, or what is the same thing, since A is invariant, his uncertainty about net output. For, while μ_p and σ_p are exogenously determined and very possibly independent of each other, it is

[7] The impossibility of negative prices enforces a restriction, the only one we shall make, upon the range of z_p. $f_p(z_p)$ must be zero for all values of z_p less than $(-\mu_p/\sigma_p)$.

[8] Since the model is concerned with farmers who are always above their own-plus-village requirements, $(X - A)$ must be positive, and hence $f_x(z_x)$ must be zero for all values of z_x less than $(-\mu_x/\sigma_x)$. For simplicity, the distributions of z_x and z_p are assumed throughout to be independent of each other.

[9] Cf. the literature cited on p. 74 of J. Tobin, "Liquidity Preference as Behaviour Toward Risk," *Review of Economic Studies*, No. 67 (Feb. 1958), pp. 65-86; in C. E. Ferguson, "An Essay on Cardinal Utility," *Southern Economic Journal* Vol. 25, No. 1 (July 1958), pp. 11-23; or in R. D. Luce and H. Raiffa, *Games and Decisions*, (New York): 1957, Chap. 2.

[10] Of course, it is not suggested that the farmer can actually do the calculations used here—only that he *acts as if* he does them.

not so simple with μ_x and σ_x. Specifically, μ_x is determined by the amount the farmer plants and the technique with which he cultivates; and σ_x is not only not independent of μ_x but is uniquely related to it—in the sense that for each μ_x there is only one σ_x which is relevant. While it is possible to conceive of two techniques which have the same value of μ_x and different values of σ_x, it is assumed that the farmer is a "risk-averter" as concerns output and that he will always, in such a situation, choose that technique for which the σ_x is lower. Mathematically, we assume that

$$\frac{\partial E(U)}{\partial \sigma_x} = \int_{z_x} \int_{z_p} z_x \, (\mu_p + z_p \, \sigma_p) \, U' \, f_x \, (z_x) f_p \, (z_p) \, dz_x \, dz_p < 0 \qquad (7)$$

How can the farmer go about finding this locus of physically possible, least-risk, $\sigma_x - \mu_x$ values? Two values present themselves immediately. One, he can plant nothing, in which case σ_x is zero and μ_x is negative to the extent of any fixed costs and his own -plus-village consumption needs; this possibility, uninteresting in itself, offers a starting point and is represented by point N in Figure 1. Second, he can cultivate his land fully, using the same technique as in the recent past. In this case, he is probably able to estimate rather closely the mean and variance of yield on the basis of his experience, σ_x deriving in this case entirely from the inconstancy of nature. This point is labelled Q in Figure 1.

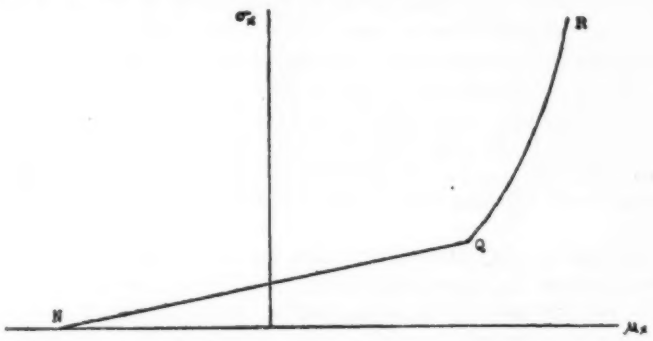


Fig. 1.

In the region between points N and Q, the position of the $\sigma_x - \mu_x$ relation can be fairly easily ascertained. Presumably, if the farmer plants some fraction of his total arable land, using his usual technique[11], he will

[11] That is, with the same amount of seed *per acre*, and so forth; if he were to use the same *total* amount of seed, this would be a change in technique. The fact that cultivation could now be more labor-intensive is irrelevant since the marginal productivity of labor has been assumed zero.

move to some point along the straight line between N and Q. There are, however, two factors which tend to warp this linear relationship. First of all, all the farmer's land may not be equally fertile so that, by fallowing some of the poorer land, he may be able to reduce σ_x significantly without great loss in μ_x (i.e., attain a curve from N to Q which is convex from below). On the other hand, while the more extreme variations of nature (such as floods and droughts) may affect all his land equally, the lesser vicissitudes probably will not; to the extent that the success or failure of the different acres is not perfectly intercorrelated, the law of large numbers implies that σ_x will not be reduced as fast as μ_x as the amount of land under cultivation is diminished (i.e., the curve from N to Q will be concave from below). In Figure 1, a linear relationship is drawn between Points N and Q, implying that these two factors exactly offset each other, although such an assumption is not necessary.[12]

In order to set the position of the $\sigma_x - \mu_x$ locus in the area to the right of Q, we must incur all the traditional problems concerning technique changes and production functions, and then some. The traditional problems consist in the distinction between what techniques are knowable, what are known or knowable at a particular time (or at a particular time to a particular person), and the definitions of " known " and " knowable." An agricultural experiment station, set up on any above-subsistence farmer's land, could undoubtedly increase its expected output and or reduce the variability, even net of the higher costs it would probably incur, through application of more skilled labor, greater knowledge and intelligence, more, better, and more carefully tested seeds and fertilizers, etc. But even agronomists would be hard pressed, at some point, to increase output (net of costs) further and would have to resort to new and untested (and hence high variance) techniques with higher and higher costs. Thus the $\sigma_x - \mu_x$ relation would become more and more upward-sloping, finally reaching some absolute maximum value of μ_x.[13]

But this $\sigma_x - \mu_x$ relation which the agronomist uncovers is not the relevant one to the above-subsistence farmer for a number of reasons. Many, perhaps most, of the techniques he does not know about or lacks the knowledge needed to apply. Others involve so high an initial cost that his credit position does not permit him to consider them. Of the remaining, the mere transfer of them from agriculture experimental station

[12] If the NQ curve is sufficiently convex from below, however, the possibility emerges that the famer will find it optimal to use less than all his land. Since such extreme convexity is hard to imagine and since low-income farmers do not in fact fallow for risk-reduction purposes, if at all, the possibility of an optimum μ_x to the left of Q will be neglected.

[13] All this is at any moment of time; the " absolute maximum " value of μ_x may increase as time passes.

to his farm may imply an increase in variance and/or a decline in net output: costs or uncertainty may increase because of improper, inefficient, or inconsistent use of the technique; however well-tested, the technique has never been tried on the particular farmer's land; the farmer may, somewhat irrationally, even further mark up the variance of a technique which is novel *to him*; and so forth. The resulting $\sigma_x - \mu_x$ relation which a particular farmer visualizes at a moment of time will become steep much more rapidly and will approach a much lower "absolute maximum" value of μ_x. This is depicted by the segment QR in Figure 1.[14]

II

Knowing μ_p, σ_p, the $\sigma_x - \mu_x$ relation and his utility function, the farmer will choose the technique (i.e., value of μ_x) which maximizes his expected utility. This requires that

$$\frac{dE(U)}{d\mu_x} = \int_{z_x}\int_{z_p} (\mu_p + z_p\,\sigma_p)\,(1 + z_x\,\sigma'_x)\,U'\,f_x(z_x)\,f_p(z_p)\,dz_x\,dz_p = 0 \quad (8)$$

where σ'_x is written for $d\sigma_x/d\mu_x$. With the use of equation (8), the second derivative may be written as

$$\frac{d^2E(U)}{d\mu_x^2} = -\frac{\sigma''_x}{\sigma'_x}\int\int (\mu_p + z_p\,\sigma_p)\,U'\,f_x\,f_p\,dz_x\,dz_p + \int\int (\mu_p + z_p\,\sigma_p)^2\,(1 + z_x\,\sigma'_x)^2\,U''\,f_x\,f_p\,dz_x\,dz_p \quad (9)$$

where σ''_x is $d^2\sigma_x/d\mu_x^2$. Since $\sigma''_x > 0$, $\sigma'_x > 0$, $(\mu_p + z_p\,\sigma_p) > 0$, $U' > 0$, and $U'' < 0$, this second derivative is necessarily negative and hence the value of μ_x which satisfies equation (8) yields a maximum of expected utility.

Equation (8) is more easily comprehended, however, if we look at it in terms of the farmer's preferences between σ_x and μ_x. Differentiation of equation (6) with respect to μ_x, $E(U)$ being held constant, gives the slope of his iso-expected-utility curves:

$$\frac{d\sigma_x}{d\mu_x} = -\frac{\int\int (\mu_p + z_p\,\sigma_p)\,U'\,f_x\,f_p\,dz_x\,dz_p}{\int\int z_x\,(\mu_p + z_p\,\sigma_p)\,U'\,f_x\,f_p\,dz_x\,dz_p} \quad (10)$$

[14] Figure 1 is drawn as if there were no indivisibilities of technique changes, as there undoubtedly are in fact. But the realism gained by drawing the QR segment as a step-function is probably not worth the concomitant complication of the model.

The numerator of (10) is clearly positive and the denominator has been assumed negative (i.e., the farmer is a risk-averter as concerns output), so that the slope of these indifference curves is positive.[15] Equation (8) can then be rewritten to state that expected utility is maximized at that value of μ_x where the highest iso-expected-utility curve just touches the $\sigma_x - \mu_x$ relation. Clearly, this may occur in either of two ways: (1) the highest attainable iso-expected-utility curve may be tangent to the $\sigma_x - \mu_x$ relation somewhere in the QR region, or (2) it may just touch the $\sigma_x - \mu_x$ relation at the point Q.[15a] In the first case, the farmer will choose some new technique for the ensuing year, but in the second, he will continue to use his old technique. And there is no reason why the second case should not be the most usual one, especially if the $\sigma_x - \mu_x$ relation is steep in the neighbourhood immediately to the right of point Q. Thus the mere existence of a change in the slope of the $\sigma_x - \mu_x$ relation at point Q (perhaps best labelled the "inertia point") is sufficient to provide an explanation of the low-income farmer's reticence to innovate; ignorance, backwardness and irrationality may play a part in this reticence, but they are not necessary concomitants. Completely rational behaviour, based upon an aversion to risk, can lead the farmer to a decision to continue to use, year after year, the same technique of cultivation.

All the above may be shown diagrammatically by super-imposing the iso-expected-utility curves upon the $\sigma_x - \mu_x$ relation of Figure 1. This is done in Figure 2, except that the effect of irrationality is illustrated

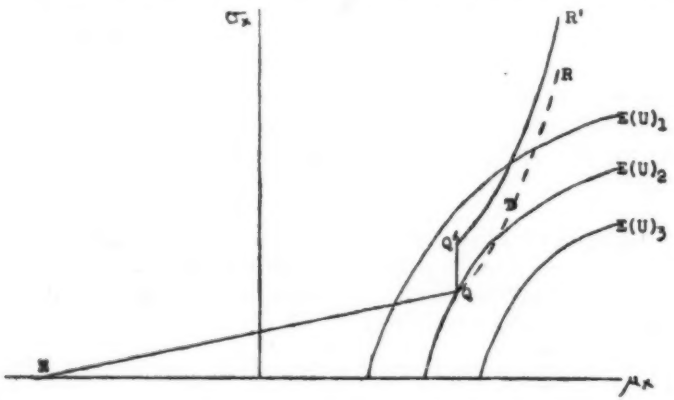


Fig. 2

[15] That the second derivative is negative can be proved by a method similar to that used by Tobin. *op. cit.*, pp. 75-76.

[15a] The third possibility, that of tangency in the NQ region, will be neglected, as mentioned earlier.

by assuming that the farmer further marks up the standard deviation of all novel techniques. Thus $Q'\ R'$ is parallel to the QR segment of Figure 1 (here dotted in), but is shifted upwards by the distance, QQ'. Now the resulting $\sigma_x - \mu_x$ relation, $NQQ'R'$, yields the highest expected utility, $E(U)_2$, at Q and there is no change of technique. The same result occurs if the farmer estimates all standard deviations more objectively, but is optimistic about the net yield of his present technique and not optimistic (or worse, pessimistic) about the net yields of potential improvements.[16] Similarly, one can see that indivisibilities of technique change may provide a further barrier to improvement; if point T (in Figure 2) represented the only possible new technique, it will not be preferred to Q, but if there existed almost any kind of (not too concave from below) curve between Q and T, (such as, for example, QR) at least some improvement in technique would take place. While reticence to change can be explained entirely on the basis of perfectly rational risk aversion, the addition of irrationality and/or indivisibilities increases the likelihood of the technique status quo—and, quantitatively, may be the more important factors.

III

The slope of the iso-expected-utility curves, as given by equation (10) is obviously affected by the mean and variance of the price ratio, p, and it is the nature of this relationship and its effect upon the farmer's technique that we must next investigate. Unfortunately, we have come as far as possible under the banner of a utility function about which nothing more is specified than that marginal utility diminishes as M increases. The effects of the parameters of the price distribution upon technique cannot be uniquely determined even as to sign without a more specific assumption as to the shape of the utility function.

Any function which relates utility to the quantity of manufactures, M, may be closely approximated by *some* polynomial expression in M, although the requisite number of powers may be quite high depending upon the definition given to the word "closely." Since the utility function is invariant under a linear transformation, however, the constant term and the coefficient of the first power of M may be chosen arbitrarily, setting these at zero and one respectively, we can always rewrite utility function (1) as

$$U = M + a_1M^2 + a_2M^3 + \ldots + a_{n-1}M^n \tag{11}$$

[16] One discovers the extent of this optimism by asking farmers to estimate their future yields and comparing these to the past. The difference, which often cannot be explained by other than plain optimism, might be justified psychologically as a reaction to the strains to which a niggardly environment subjects the farmer, but it is nevertheless a hindrance to innovation.

The restriction that marginal utility be positive and diminishing implies that function (11) is valid only for values of the coefficients (or of M) such that

$$1 + 2a_1M + 3a_2M^2 + \ldots + na_{n-1}M^{n-1} > 0 > 2a_1 + 6a_2M + \ldots + n(n-1)\,a_{n-1}M^{n-2} \qquad (12)$$

Substitution of (11) into (6) indicates that a utility function involving the nth power of M will give an expected utility function involving the first n moments of the distribution of z_p and z_x. Here we will assume that only the first two moments, measures of central tendency and of dispersion, are relevant to the farmer's choice of technique;[17] and hence his utility function can be sufficiently closely approximated by a quadratic function, namely,

$$U = M - aM^2 \qquad (13)$$

Conditions (12) require that a be positive and that[18]

$$1 - 2aM > 0 \qquad (14)$$

Substitution of utility function (13) into (8) gives the farmer's optimal technique in terms of the price and utility parameters ;

$$\mu_x + \sigma_x\sigma'_x = \frac{\mu_p}{2a\,(\mu^2_p + \sigma^2_p)} \qquad (15)$$

For any change in μ_x, there is a change in σ_x in the same direction and a change in σ'_x which is at least not in the opposite direction; then if we write

$$F = \mu_x + \sigma_x\sigma'_x \qquad (16)$$

any change in the optimal technique (i.e., in the value of μ_x which maximizes expected utility) will be reflected in a change of the same direction in F, and vice versa. Therefore F may be considered as a variable representing technique—a higher (lower) value of F implies either the use of a technique with higher (lower) μ_x or, if the farmer is at the " inertia point," Q, a position nearer to (farther from) the new technique region, QR.

[17] See the Appendix for further discussion.

[18] Condition (14) may be more precisely expressed as three conditions, once M is replaced by its component parts (see equation (5)):

1. $$0 < a < \frac{1}{2\mu_p\,\mu_x}$$

2. $$\bar{z}_x < \frac{1 - 2\,a\mu_p\mu_x}{2a\mu_p\,\sigma_x}$$

3. $$\bar{z}_p < \frac{1 - 2a\mu_p\,(\mu_x + \bar{z}_x\,\sigma_x)}{2\,a\sigma_p\,(\mu_x + \bar{z}_x\,\sigma_x)}$$

where $\bar{z}_x$ and $\bar{z}_p$ represent the upper limits to the ranges of z_x and z_p respectively. Both these upper limits must, of course, be positive since the distributions have zero mean and positive variance.

Partial differentiation of (15) shows that increases in the expected price decrease F, but at a decreasing rate, and that increases in the standard deviation of price decrease F at an increasing rate.[19] These effects are illustrated in Figure 3 for several (arithmetically increasing by some

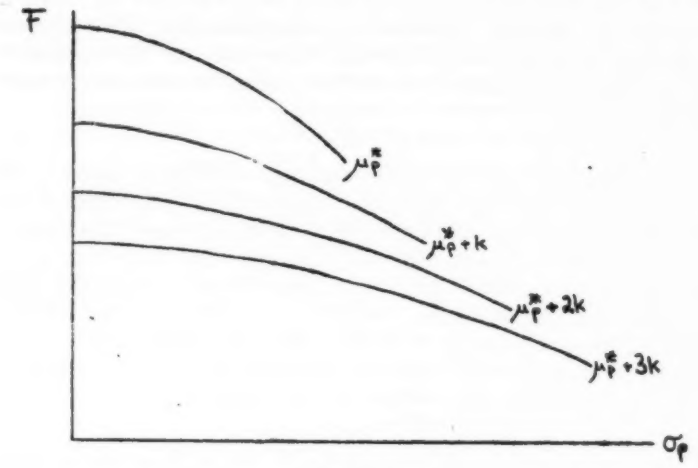


Fig. 3

amount k) values of μ_p (no values of σ_p greater than $\mu_p/\sqrt{3}$ are drawn). A reduction in the variance of prices will be seen to lead the farmer toward a higher-yield technique; moreover, a given dose of price-stabilization will be the more effective the greater is the present variance and/or the lower is the expected price. Price incentives appear to be no incentives at all as concerns the farmer's technique—not only does a fall in the expected price induce the farmer toward a higher-yield technique, but this inducement is the greater the lower are expected prices already.

IV

The conclusions of the preceding section are somewhat different from those usually encountered, especially as concerns the effect of expected prices upon technique. This is largely the result of our shift in emphasis from the farmer's *ability* to innovate to his *desire* to innovate. Analysis

[19] Mathematically, $\partial F/d\mu_p$, $\partial F/\partial\sigma_p$ and $\partial^2 F/d\sigma_p^2$ are negative and $\partial^2 F/\partial\mu_p^2$ and $d^2F/d\sigma_p\, d\mu_p$ are positive. $d^2F/d\,\sigma_p^2$ and $d^2F/d\mu_p^2$ would change signs if $3\sigma^2_p > \mu_p^2$ but such high variances are not likely. In fact, they are impossible if z_p is symmetrically and uni-modally distributed (about zero) for then the lower limit of z_p (i.e., $\underline{z}_p$) must be less than $(-\sqrt{3})$ if it is to have the unit variance assumed; but the impossibility of negative prices requires that $\underline{z}_p > (-\mu_p/\sigma_p)$. Thus, μ_p^2 must be greater than $3\sigma_p^2$.

of ability—and hence of such problems as the farmer's small savings, his often heavy indebtedness, the lack of adequate and/or appropriate credit facilities, his ignorance, etc.—is probably insufficient by itself. But it should not be thought that these considerations are unimportant; indeed, it is they that chiefly determine the shape of the QR segment (in Figure 1) of the $\sigma_x - \mu_x$ relation. For example greater availability of low-interest agricultural credit will almost certainly flatten out the QR segment.[20] and increase, *ceteris paribus*, the likelihood of an improvement in technique.

To the extent that future price anticipations affect the shape of the relation, especially in its QR portion, changes in the parameters of the price distribution may affect the likelihood of technique improvement quite independently of any effect they have upon the farmer's desire to innovate. Before concluding that lower expected prices or reduced price risk will induce improvements, therefore, we must notice the possible effects that these will have on the farmer's ability to undertake innovation. Though necessarily indirect since the relation is not explicitly related to prices, these influences may nevertheless be significant.

One basic influence of expected prices derives from the fact that credit may be more easily (and reasonably) acquired by the farmer if rural lenders expect crop prices to be good, for the risk of default and the probable demand for subsequent consumption loans are both thereby reduced. This may make possible changes which the farmer could not otherwise consider. A second influence may result from the fact that future price anticipations are almost entirely determined by the course of prices in the recent past. If there is any lag in the adjustment of the farmer's consumption habits, then increased availability of funds for self-financing innovations and higher expected prices may occur together, both being caused by the same thing.

Thus, there is a good *a priori* case for the assertion that changes in expected prices work at cross purposes as concerns the inducement to alter technique. Higher anticipated prices will improve the farmer's ability to finance the costs of innovation but will reduce his willingness to undertake the additional uncertainty involved; and vice versa for lower expected prices. Which of these factors will predominate, and by how

[20] It can do this in two ways: (1) by lowering interest rates and hence increasing the *net* yield of new techniques, the variances being unchanged; and/or by making financially possible a high cost technique (but one which lies below the present σ_x—μ_x relation) which could not be considered previously. Risk-sharing credit might be even more effective, for it directly reduces the variance of new techniques while not affecting the net yields.

much, are of course empirical questions, but one thing is certain: the *net* effect of the use of (higher or lower) expected-price incentives will not be so great as analysis of desire or ability alone would indicate.

The influence of anticipated price variance is less clear. As concerns rural lenders, if they too are " risk-averters,"[21] they should be willing to lend more (or more cheaply) if the farmer's uncertainty is reduced. Also, such reduced risk decreases the demand for consumption loans the lender expects from farmers and should therefore make him more willing to lend for productive purposes. How greater certainty affects the farmer's liquid resources and hence his ability to self-finance innovations requires some hypothesis about why the farmer saves and when he will release his savings for production expenses. Most low-income-receivers save something at least in some years (even if this serves only to reduce indebtedness), but certainly not, especially in rural India, for the usual high-income reasons of retirement and bequeathment. Such saving is for the purpose of smoothing the consumption pattern over time—or, less euphemistically, to avoid starvation in bad years. Under these circumstances, any reduction in the farmer's uncertainty will lead to a reduction in his saving and hence in his ability to self-finance. On the other hand it is questionable whether such critical precautionary holdings would in any case be released for the financing of new techniques.

The effect of changes in price uncertainty upon the farmer's ability to undertake new techniques being dubious, it may not be too dangerous to suggest these considerations will not outweigh the effects upon his desire to innovate. In any case, as concerns price-stabilisation, we do not find that such a policy has directly conflicting influences upon the desire and ability to improve technique, and this absence in itself offers a *prima facie* case for the superiority of stabilization over price incentives.

V

Since all the preceding analysis is premised upon a static utility function, it is perhaps time to examine the causes of changes in the farmer's want-level and the effects of such upon his willingness to change technique. The concept of want-creation being very complex and often very non-economic, it must here be handled very briefly and (perhaps

[21] Lenders *should* be risk-averters since they are " one-way " shareholders in the farmer's enterprise—that is, they lose if the farmer is unable to repay his loan, but gain no more than the agreed interest if the innovation succeeds. If, however the real profits of lending come from the compounding of interest on previously defaulted borrowings, such lenders may be " risk-lovers " (to use that term in a somewhat perverse sense).

overly) simply. A change in the farmer's utility function will be considered as no more than a change in the value of the parameter, a, of the quadratic utility function (13), the desired quantity of own-plus-village consumption being assumed unaltered. In other words, an increase in the intensity of the farmer's desires for (or the utility that he derives from) non-village-produced goods is seen as a reduction in the rate at which the marginal utility of such goods diminishes.

Mere inspection of equation (15) shows that the lower is the value of a the higher is that of F—that is, the less rapidly the utility of additional consumption declines, the more willing the farmer is to innovate. This is but another aspect of one of the fundamental truths about man, namely, that the more badly he wants something the more he will sacrifice to attain it. Here, the sacrifice consists in the farmer's willingness to undergo the additional uncertainty of new production methods.

If the effects of want-creation are fairly easily determined, the causes of changing wants are not ; and it is far beyond the scope of this paper to attack this problem generally. Rather shall we try to see if changes in expected prices or in the variability of prices may have repercussions upon the farmer's willingness to innovate through their effects upon his utility function. There seem to be two channels through which they may operate.

The first makes use of the fact that changes in the level or variability of expected prices generally result from changes of the same type in the recent course of prices, and is based upon two hypotheses about human nature: (1) that goods of low anticipated utility before they are used become more desirable once a person becomes accustomed to them, and (2) that the utility function expands readily but is not, or is only very slowly, reversible. Thus, higher expected prices derive from higher past prices and this also means that more non-village-produced goods have been consumed in the recent past. Aside from the direct effect in equation (15), a rise in expected future prices will thus occur simultaneously with a fall in the parameter, a, and will make the farmer more willing to innovate. Similarly, a rise in the variance of future prices will mean that prices have been more variable in the recent past and hence that the farmer has been experiencing a more violently fluctuating level of consumption of non-village-produced goods; on the irreversibility assumption, the good years will have been lowering the value of a more than the bad will have been raising it, and the higher variance will increase the farmer's desire to improve technique through its effect upon his utility function. Of course, the farmer may react to the greater price-uncertainty by saving more in the good years in order to smooth his consumption, and then there will be no, or little, effect upon his wants.

The second channel is the marketable surplus. In order to make the mathematics of the model more manageable, it was assumed that A, the amount of the farmer's own-plus-village consumption, was invariant; in fact, however, any change in the parameters of the distribution of anticipated future prices will almost certainly induce some change in the amount the farmer plans to market. This fact does not necessarily damage the usefulness of the model as an approximation to reality, but it does suggest a way in which the price parameters may indirectly affect the farmer's technique choice. Given the farmer's *total* output (net of all costs, rents, and taxes but not of his own-plus-village consumption), a higher anticipated mean price and/or a lower anticipated variance of prices may induce some reduction of A,[22] thereby increasing his marketable surplus and his consumption of non-village-produced goods. On the basis of our human nature hypothesis of the last paragraph, increased enjoyment today will lead to increased marginal utility tomorrow, and hence a higher μ_p and/or a lower σ_p will cause a fall in a and, thereby, an indirect inducement to innovation.

The importance of these indirect influences upon technique through wants is of course an empirical question, but it does open up the possibility that higher expected prices will *not* diminish the farmer's desire to improve technique—and may even increase it if the effects through wants are as argued above and sufficiently large. The connection between price variability and wants is conflicting, and one is tempted to conclude that it is small, if not neutral, with respect to technique.

VI

Analysis of the impact of government taxation upon markets and individuals is always made difficult by the fact that the effects are so many and so diverse. And this is also the case with the imposition of taxes upon the low-income farmer. If the taxation is sufficiently heavy, it may succeed in making a subsistence of an above-subsistence farmer, or a below-subsistence of a subsistence farmer.[23] Or it may have an effect upon the farmer's marketable surplus by forcing him to reduce his own-plus-village

[22] But, if the income effect of the change in the expected price outweighs the substitution effect, the marketable surplus would decrease with higher values of μ_p. The variance of future prices will affect the farmer's marketable surplus decisions only if these must be made at planting rather than at harvest, i.e., if his very choice of crops *is* his marketing decision. Nevertheless, if σ_p is relevant to the farmer's decision, a reduction in it will certainly induce him, as a risk-averter, further into the market.

[23] Or it may turn a backward into a no-longer-backward farmer either by (1) removing that portion of his crop for which he has no utility-giving use, or (2) forcing him into the market place to pay money taxes and thereby displaying to him new consumption opportunities.

consumption as well as his purchase of non-village-produced goods. To the effect that taxation affects the marketable surplus or the demand for manufactured goods by farmers, prices and possibly employment throughout the economy will be altered.

To investigate all this, however, would require a much more general model than is being employed here. Rather shall we look at the above-subsistence farmer who remains in this class after the imposition of (or change in) taxes and who pays the levy by means of an appropriate reduction in his consumption of non-village-produced goods (M). Moreover, this loss of demand for M is assumed to be exactly offset by an increase in government demand, so that there is no effect upon the prices of manufactured goods or upon the urban demand for agricultural goods.[24] With the forest now cleared, we may focus on the tree of innovation—that is, on the effect of different kinds of taxation upon the optimal technique of the above-subsistence farmer.

The types of taxes to be examined are four: (1) an excise tax imposed upon the marketed portion of the farmer's output; (2) a poll tax in kind, i.e., one which is independent of the amount or value of the farmer's output and which is levied in physical units; (3) a poll tax levied in money terms; and (4) a proportional "income" tax, i.e., one which takes a fixed fraction of the farmer's output, or value of his output.

1. *Excise Tax.* Since we have assumed that the farmer's own-plus-village consumption and the urban demand for food are unchanged by taxation, the impact of an excise tax is entirely upon the price received by farmers, this being reduced by the amount, e, of the excise. Thus, p_e, the farmer's price after tax, is given by:[25]

$$p_e = (\mu_p - e) + z_p \sigma_p \tag{17}$$

and the amount of M which the farmer can purchase is:

$$M = (\mu_p - e + z_p \sigma_p)(\mu_x + z_x \sigma_x) \tag{18}$$

[24] In the Indian economy of recent years, the fluctuations in the prices of manufactured goods have been sufficiently small relative to those of agricultural goods, so that it is not unrealistic to assume that the former are fixed and that the variability of the farmer's terms of trade is due to the fluctuations of the latter. It would be sufficient, for short-run purposes, to assume merely that the farmer does not alter his estimates of the mean and variance of his terms of trade as a result of the change in taxes, but if there were in fact some effect upon prices he would have to revise his estimates eventually.

[25] Technically, the excise tax considered here is being imposed upon the terms of trade between own-plus-village and non-village-produced goods, but under the assumption that prices of the latter do not change, the difference is irrelevant.

With the quadratic utility function (13), the maximization of expected utility requires that the farmer choose that technique for which:

$$F_1 = \frac{\mu_p - e}{2a\left[(\mu_p - e)^2 + \sigma^2{}_p\right]} \tag{19}$$

where the subscript 1 after the F means that this is the value of F under the first tax considered. The partial differential of (19) with respect to e shows that F_1, and hence expected net[26] output of the optimal technique, is raised by increasing the excise tax.[27] This result is not surprising since the imposition of an excise tax means, in its effect upon the farmer, nothing but a lower expected price,[28] and that was seen (in Section III) to increase the likelihood (or the extent) of innovation.

2. *Poll Tax in Kind.* A lump-sum tax, T_k, in the same physical units as the farmer's crop will, on our assumptions, have no effect other than to reduce the amount he will be able to sell for the purchase of non-village-produced goods.[29]

Thus, his marketed surplus will be:

$$X - A = (\mu_x - T_k) + z_x\sigma_x \tag{20}$$

And the amount of M he will receive for it will be:

$$M = (\mu_p + z_p\sigma_p)(\mu_x - T_k + z_x\sigma_x) \tag{21}$$

Maximization of expected utility leads to:

$$F_2 = \frac{\mu_p}{2a(\mu_p{}^2 + \sigma_p{}^2)} + T_k \tag{22}$$

Inspection of (22) shows that the optimal technique will be one of higher net output with a poll tax in kind than without, and that the higher is T_k the higher will be F_2.

3. *Poll Tax in Money Terms.* The only difference between this and the preceding tax is that now the farmer must do the marketing himself and

[26] Throughout this section, net output will mean total output net of all costs, rents and own-plus-village consumption, but no longer net of taxes since these are now being considered explicitly.

[27] Provided that $\mu_p - e > \sigma_p$ This inequality will hold as long as the excise tax is not so great as to make negative values of p_e possible.

[28] Indeed, this is one of the ways the government might implement a decision to lower the farmer's average price. It might even be the only feasible way if the government does not have, and cannot acquire, buffer stocks.

[29] It would seem that agricultural prices would be raised as a result of this reduction in the farmer's marketings. But, under our assumption that the government uses the tax revenue to demand manufactured goods, the government must sell all of its in-kind tax "revenue" —so the same amount is marketed in the end.

turn over some of the money proceeds to the government. Thus, the amount of M which he will be able to consume is:

$$M = (\mu_p + z_p \sigma_p)(\mu_x + z_x \sigma_x) - T_m \tag{23}$$

where T_m is the amount of the tax.[30] The technique which maximizes expected utility is the one satisfying:

$$F_3 = \frac{\mu_p [1 + 2a T_m]}{2a (\mu_p^2 + \sigma_p^2)} \tag{24}$$

Clearly, the higher is the tax the higher is F_3.

4. *Proportional Income Tax.* If it is to be something more equitable than a mere government toll or marketing commission per unit sold, the income (or output) tax must be based upon the farmer's *total* output and not just that which travels beyond the village.[31] Correctly assessing the farmer's total output, and in such a way that cheating is impossible, is in practise a difficult administrative problem which we will avoid by assuming that the tax base is the marketable surplus, $X - A$, plus some amount, Y, which consists of the total non-deductible parts of costs, rents, interest, and own-plus-village consumption.[32] If the tax rate is t, the amount of the tax will be:[33]

$$t(X - A + Y) = t(\mu_x + Y + z_x \sigma_x) \tag{25}$$

The amount of M which the farmer is able to buy is:

$$M = (\mu_p + z_p \sigma_p)[(1 - t)(\mu_x + z_x \sigma_x) - tY] \tag{26}$$

And expected utility maximization requires:

$$F_4 = \frac{\mu_p}{2a(1 - t)(\mu_p^2 + \sigma_p^2)} + \frac{tY}{1 - t} \tag{27}$$

F_4 will be the larger the higher is t (provided it is less than unity) and the fewer deductions that are allowed (i.e., the higher is Y).

Therefore, all four of the taxes serve to increase F, which means that they either improve the likelihood that some new technique will be tried or

[30] Technically, this is not a money tax but a tax stated in terms of manufactured goods. Again, because the price of manufactured goods is assumed constant, the difference is irrelevant.

[31] The government may wish to permit some deductions before imposing a proportional tax upon the remainder, but presumably these deductions will be less than all the costs, rents, interest, and own-plus-village consumption.

[32] Clearly, the smaller is Y the more progressive is the "proportional" income tax, and vice versa.

[33] It will not matter whether the tax is expressed in kind or in money. It is written in kind in equation (25), but if in money terms the amount of the tax would be simply equation (25) multiplied by $(\mu_p + z_p \sigma_p)$. The amount of M enjoyed would still be as in equation (26).

induce the farmer to install a different new technique, and one of higher net yield, than he would otherwise have attempted. This felicitous result with respect to the farmer's desire to innovate is unfortunately offset, at least partially and perhaps more than wholly, by the effect of taxation upon his ability to innovate. For much the same reasons as were discussed in Section IV, higher taxation will almost certainly steepen the $\sigma_x - \mu_x$ relation by reducing the farmer's liquid resources and/or his supply of credit. The general conclusion must be that taxation will have an uncertain effect upon technique improvement.

But the question facing governments in underdeveloped countries is seldom whether to tax farmers or not, for the problem of increased agricultural output is but one aspect of growth. Rather is the tax revenue from the agricultural sector so essential (for many reasons, not the least being the paucity of alternative revenue sources) that the only relevant consideration is the method of taxation. Let us treat the expected tax revenue as fixed, for this will not only satisfy the government requirements but also will reduce the farmer's ability to innovate by a roughly fixed amount; then we can examine the differences between the various means of taxation in their impact upon optimal technique. The expected tax revenues in money terms (or, more correctly, in terms of manufactured goods) are: for the excise tax, $e\mu_x$; for the poll tax in kind, $\mu_p T_k$; for the money poll tax, T_m; and for the proportional income tax, $t\mu_p\ (\mu_x + Y)$. By taking the partial derivatives of F_1, F_2, F_3, and F_4 with respect to e, T_k, T_m, and t respectively, we can compare the effect upon F, and hence upon technique, of the different infinitesimal taxes, each for the same expected revenue.[34] These comparisons yield two significant results. First, the poll tax in kind will raise F more than the poll tax in money terms (for the same expected tax revenue). And second, the proportional income tax will raise F by more than will any of the other three taxes (again, for the same expected revenue),[35]. The logic underlying these results is not hard to see once it is realized that the different taxes involve

[34] To compare, for example, the excise tax with the poll tax in kind we examine the direction of the inequality of:

$$\frac{\partial F_1}{\partial e} \cdot \frac{de}{dT_k} \gtrless \frac{\partial F_2}{\partial T_k}$$

where $\partial F_1/de$ and $\partial F_2/dT_k$ are evalued at e and T_k equal to zero and de/dT_k is found from:

$$e\mu_x = \mu_p T_k$$

to be:

$$de/dT_k = \mu_p/\mu_x$$

[35] Provided that Y is not too large; otherwise the excise tax may raise F by more than the proportional income tax. The reason for this is that, as Y becomes very large relative to $(X - A)$, the tax becomes more and more of a poll tax (since Y is fixed, in the simple case considered here, independently of output).

the government in different degrees of uncertainty-sharing. The money poll tax assures the government a fixed money revenue every year—the government bears no uncertainty in this case. The poll tax in kind forces the government to the market (since we assume that the "revenue" is sold in order to purchase manufactured goods), and hence some of the price uncertainty is transferred from the farmer to the government. The excise tax has a fixed revenue per unit marketed, but the government revenue is tied to the uncertainty about the amount marketed. And in the case of the proportional income tax, the government becomes involved in the uncertainty about both the farmer's production and his prices. The more uncertainty the government assumes in connection with its tax revenue the less risk remains with the farmer, and so the more risk in the form of new technique-uncertainty he is willing to undergo.

From the viewpoint of expanding agricultural production over time, the government should therefore incur as much risk as possible, preferring in-kind to in-money poll taxes and income taxes[36] to all other types. But this neglects the fact that the government may be unable to bear this uncertainty. Often the expenditure programs are quite rigid and, in underdeveloped countries especially, further deficit-financing may be dangerous—which means that the government is forced to be a risk-averter as concerns the size of its tax revenues. Such government risk-aversion would indicate a preference for money poll taxes, and the fact that the largest part of agricultural taxation (of low-income farmers) is of this type—that is, a fixed annual money tax per acre of land—may be no coincidence in this connection.

Of course, the amount of uncertainty the government assumes will be less than the sum of uncertainty removed from the farmers, except in the unlikely case that the outputs and/or prices are perfectly correlated over all farmers and regions of the country.

We have assumed that the farmer's own-plus-village consumption is fixed and that the marketable surplus varies solely because the size of the farmer's crop does. In actuality, this is not necessarily the case, and any tax proposal must be carefully examined for possible detrimental effects upon marketed surpluses. It is for this reason that excise taxes are quite suspect—if, as was suggested in Section V, the marketed surplus is positively responsive to (after tax) prices, such taxes may prove expensively inflationary. The income tax may also adversely affect the marketed

[36] Whether, in turn, a progressive or regressive income tax might not be better than a proportional one is a question we are not equipped to answer here, although there are obvious reasons for fearing that a too-progressive tax might reduce the farmer's incentive to innovate.

surplus, though for a different reason. It is relatively easier for an administrator to assess that output which the farmer markets than that which never leaves the village ; and it is much harder to preclude cheating in the declaration or assessment of the latter portion. As a result, such a tax runs the risk of becoming no longer an income tax but either a tax based largely on the marketed surplus (and hence an *ad valorem* excise tax), which would probably reduce that essential item, or a tax based mainly on acreage (and hence a poll tax in kind).

The two kinds of poll taxes, being intrinsically non-marginal, cannot have any such effects upon the marketed surplus, and perhaps should be advocated for just that reason. Which one should be chosen depends chiefly upon the government's ability to accept revenue-uncertainty ; if possible, land taxes which are set in units of the farmer's produce (or, what is the same thing, money land taxes which vary with the level of agricultural prices) should be used since, for the same average revenue over time,[37] they afford the greater inducement to the farmer to improve his technique.

Incidentally, although this analysis has been concerned with the effects of taxation, the results may be extended straight forwardly to rents as well. Rental charges which demand a fixed fraction of the farmer's total output are preferable to those which call for a fixed quantity of produce; and these latter are preferable, in turn, to fixed money rents—the comparisons being made, of course, for the same expected rental income.

VII

One of the primary tasks, and perhaps even the precondition, of economic development is the raising of productivity per worker in the agricultural sector. Theoretically, this can be achieved in two ways, either by increasing the output with the same number of workers or by reducing the number of workers while maintaining the output. In fact, because of the costs and " leakages " inherent in the process of transferring labor out of agriculture,[38] any reduction in the agricultural labor force is usually

[37] Provided, of course, that the government fixes the rates in terms of the correct future price level. An over-estimate of future prices will lead to a lower average tax revenue, and vice versa. To the extent that there is secular inflation, which the government does not allow for, in kind poll taxes will offer greater revenue than money taxes, but their comparative advantage concerning technique is no longer certain.

[38] See Chapter 2 of R. Nurkse, *Problems of Capital Formation in Underdeveloped Countries* (Oxford, 1952); and Chapter 9 of C. N. Vakil and P. R. Brahmananda *Planning for an Expanding Economy* (Bombay, 1956).

dependent upon the prior achievement of an increase in agricultural output. More accurately, it is an increase in the amount of *marketed*[39] agricultural produce that permits the labor transfer, and in the short run at least this quantity may change without any change in total output.[40] But it is doubtful if, in an economy of predominantly very low-income farmers, any substantial or permanent rise in the marketed fraction of total output can be attained without any increase in the size of the output itself. And so we come back, as do the Indian Five-Year Plans, to the critical problem of increasing agricultural production.

Certainly no small part of this problem lies beyond the scope of the individual farmer, in the provision of such rural and agricultural overhead capital as roads, irrigation schemes, flood control, seed improvement, etc. But the rest of the problem, equally no small part, consists in making the individual farmer more willing (or better, more anxious) and more able to improve his technique of cultivation. It is a mistake to consider the farmer hopelessly backward simply because he will often not accept a new technique which even he admits would have a higher expected yield. And equally erroneous is the defeatism which notices that the low-income farmer eschews risk in his already tenuous existence and concludes that he will reject all new techniques. The correct approach lies between the two extremes; farmers, almost necessarily risk-averters, will innovate only if the expected yields are sufficiently higher to justify the additional risks—but by the word " sufficiently " is not generally meant " infinitely."

Thus, it is in terms not only of the average expected yield but also of the uncertainty in which it involves the farmer that potential agricultural improvements must be discussed. It is for the emphasis of this latter consideration that the $\sigma_x - \mu_x$ concept becomes analytically valuable. Government policies toward increasing the farmer's ability to undertake innovation may always be viewed in terms of this $\sigma_x - \mu_x$ relation—to be effective, any such action must (1) increase the average net yield of some potential innovation, for the same variance of yield, (2) reduce the variance attached to some potential innovation, for the same expected net yield, and/or (3) make financially possible, or known, to the farmer some potential new technique. For these are the ways in which the locus of

[39] The word " marketed " is used in the broad sense of output not consumed within the cultivator's village.

[40] It is shocking how little is written or known in Indian agricultural economics about the determinants of the farmer's marketed surplus. In this paper we have made the simple assumption that, for the low-income, above-subsistence,)but not backward farmer, the marketed surplus is a residual quantity—fluctuating with, in amount (and hence more than, in proportion), the famer's total output. Even this, not to mention the further suggestion that the marketed surplus may increase with a rise in μ_p or a decline in σ_p, goes beyond the possibility of confirmation or refutation by published studies.

least-risk techniques is lowered and, *ceteris paribus*, innovation made less risky and hence more likely.

The very steepness of the new-technique portion of the $\sigma_x - \mu_x$ may be the sole cause of stagnation of technique in agriculture, simply because this steepness is responsible for the "inertia point." But it is not enough to consider only this factor unless the economy is blessed with at least reasonably entrepreneurially-minded farmers. Probably the flattening of the $\sigma_x - \mu_x$ relation deserves the first attention it almost always receives in underdeveloped economies ; but subsequent attention must generally be given to the inducements to innovate. Policiès toward this latter goal are seen to operate in two ways, either by altering the farmer's wants and/or by working within a given want-structure. Ultimately, reliance is placed upon the expansion of wants, being a potentially limitless force, but, in a shorter period and in the context of government planning,[41] policies which operate within a fixed want-structure may be important.

Even within the limited context of this paper, incentives provided through the level of expected prices have been seen to be of dubious value. Once one considers the possible repurcussions through the economy and the expense of any such policy in terms of additional deficits or foreign exchange (if buffer stocks are required), a government effort to raise or lower the general level of prices should almost certainly be rejected. But a shift in methods of agricultural taxation or a provision of greater stability to prices have been shown to be more certain in their effects, and they are less expensive policies. In view of the great importance of agricultural production to the process of industrialization and development, adoption of some such policies may be well worth the costs.

Univ. of Bombay
and
Univ. of Yale

RICHARD C. PORTER

[41] It is much easier for a government to lower prices or change taxes than to "create wants."

APPENDIX

The purpose of this appendix is primarily a more careful exposure of the many assumptions about the low-income but above-subsistence farmer which underlie our use of the deceptively simple utility function (1), i.e., $U = U(M)$. As a byproduct of this process, we will be able to distinguish more accurately between the various types of low-income farmers mentioned in the next, namely, "subsistence," "above-subsistence," and "backward."

Once we have decided to neglect the problem of intra-group substitutions (and price changes) within the category of own-plus-village goods, A, and of non-village-produced goods, M, the farmer's preference function can be written most generally as:

$$U = U(M, A) \qquad \text{(i)}$$

where U, usually referred to for reasons of brevity as "utility," is more accurately seen as a ranking index such that higher values of U represent preferred collections of the goods, M and A. In the world of uncertainty with which the model deals, however, certain further assumptions must be made about this preference index, U. With many possible outcomes before him, the farmer is assumed to choose among the variables under his control so as to achieve the highest possible *expected* value of U.[1] This in itself requires two further assumptions: (1) that the probabilities of the various uncertain outcomes (i.e., of prices and net outputs) are cardinally assignable by the farmer, and (2) that the preference ranking, U, can be cardinally constructed, for otherwise different monotonic transformations of U will lead to different optimal values of the choice variables.

But even acceptance of all the above (plus some assumptions about the partial derivatives of utility function (i)) is not enough to permit the derivation of unique hypotheses about the effects of certain changes upon the farmer's behaviour. So a further assumption was made, namely that only the first two moments of the probability distributions were relevant to the farmer's choice of tehcnique. This can be defended as the best first approximation to reality available to us, but it is nevertheless restrictive—in fact, it is not unlikely that the farmer will consider the skewness, and perhaps even the peakedness, of the various probability distributions before him. As long as only the first two moments—the mean, a measure

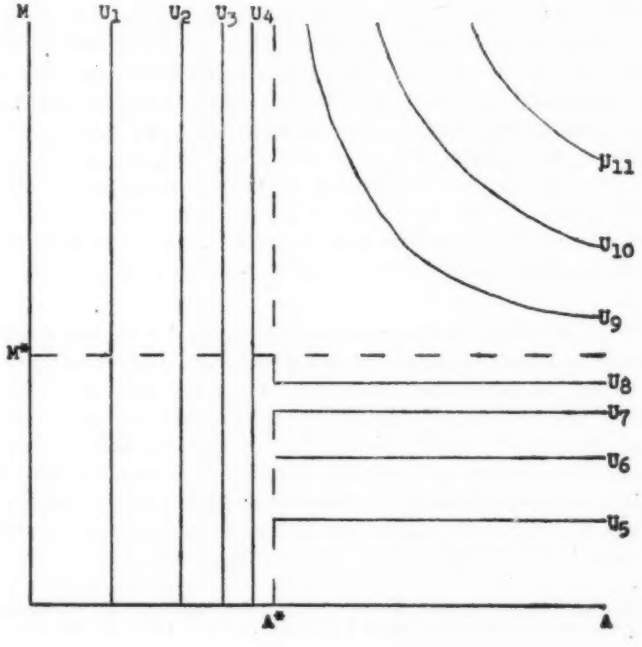
[1] This assumption can be derived as a result from several more primal assumptions, but this does not negate the fact that it is only one possible mode of behaviour under conditions of uncertainty; another might be that the farmer acts so as to minimize the probability of a value of U below a certain level.

of central tendency, and the standard deviation, a measure of dispersion—are relevant, the utility function need not include powers of M and A greater than the second, and hence might be written:

$$U = b_0 + b_1M + b_2A + b_3M^2 + b_4A^2 + b_5MA \qquad \text{(ii)}$$

where b_0 and b_1, for example, may be arbitrarily specified since the ranking permits of any linear transformation; and where assumptions about positive but diminishing marginal utility would place certain restrictions on the permissible values of the b's.

If the nature of the two goods, M and A, and the manner in which they enter into the farmer's preferences were unknown to us, we might proceed with the fairly general utility function (ii). But we have not yet made use of some essential information—namely, that we are discussing a low-income farmer. This farmer is operating in the neighbourhood of subsistence and is choosing among such basic items as food and clothing. In these circumstances, the preference ordering between M and A is very much simpler than function (ii) would indicate, for that function stands ready to compare different bundles of goods which can immediately be seen to be incomparable. For example, how much manufactured goods



(M) are required to go with an insufficient quantity of food (A) to enable survival if that combination is to be preferred to no M and a sufficient amount of A for survival ? And, once the farmer has sufficient food, is the choice between more-food-and-no-clothing and no-more-food-and-some-clothing really a very meaningful one ?

Thus we have chosen to replace utility function (ii) with one which incorporates a rather extreme version of the "Principle of the Irreducibility of Wants."[2] A person's first concern must be for food, and it is only after he has achieved a reasonable amount of it that he can interest himself in his less basic wants; then he will turn to his more essential desires for manufactured items (e.g., clothing, cooking utensils, etc.); and finally he reaches the third stage when he begins, for the first time, to consider the choice between more (or better) food and more manufactured items as comparable alternatives. This hierarchy of wants in the neighbourhood of subsistence gives the clue to the shape of the farmer's utility function at low income levels. Increased utility is derived solely from increased food (A) at first and solely from increased manufactured items (M) at the second stage; the normal downward-sloping indifference curves do not appear until the third stage is reached.

The farmer's preference map is illustrated in Figure 4, where U_1, ..., U_{11} represent increasing levels of utility (i.e., more preferred positions). U_1 through U_4 are in the first stage, when the farmer is solely concerned with getting sufficient food, and A^* is the amount of food consumption at which the farmer turns his thoughts towards other goods (M). U_5 through U_8 are in the second stage, where only M is considered, and M^* is the point at which he starts to think of A and M as substitutable goods. From U_9 onwards, the curves are of normal shape in the sense that the farmer can be given less of one good and still made just as well off if he is compensated with a sufficient (and finite) amount of the other good.

While it is believed that the schema of Figure 4 is the best simple representation of a low-income earner's preferences, its extreme rigidity on two counts should not be overlooked. First, the switchovers between stages occur at points, A^* and M^*, whereas in fact they must occur in regions (that is, U_4 should blend smoothly into U_5; and U_8 into U_9), although these regions are probably narrow. And second, at least some quantity of non-food items (M) enter fairly early into the famer's preferences, although it is amazing how little non-village-produced consumption there is in a very low income Indian villager's existence.

[2] See pp. 514 ff. of N. Georgescu-Roegen, "Choice, Expectations, and Measurability," *Quarterly Journal of Economics*, Vol. 68, No. 4 (Nov. 1954), pp. 503-534.

The various classes of farmers described in the text can now be defined in terms of the portion of Figure 4 which is relevant to them. A " subsistence " farmer is one who, according as his crop is good or bad, finds himself in the $U_1 - U_4$ range ; alternatively, he may be defined as one who has no marketable surplus even in his good crop years. An " above-subsistence " farmer is in the $U_5 - U_8$ range—exactly where depends not only on the amount by which his crop exceeds A^* but also on terms of trade with the non-village sector. A third possibility is the ' sometimes-above-subsistence " farmer, who is in, say, the $U_3 - U_6$ range. The utility of the " above-subsistence " farmer is seen to be wholly dependent upon the quantity of M which he consumes and hence we are able to write equation (1), i.e., $U = U(M)$. Since we are concerned with innovation, analysis of the " above-subsistence " farmer is probably the most valuable, but the other two groups could similarly be investigated.

From Section III on, it was assumed that the utility levels, U_5 through U_8, are quadratic functions of the size of M (equation (13), i.e., $U = M - aM^2$). This rules out the possibility that the " above-subsistence " farmer under analysis is also a " backward " farmer since, for the latter, at least some potentially attainable amounts of M yields no marginal utility; if, for example, all values of M between zero and M^* have non-zero probabilities, then the " backward " farmer's preference map ceases to exist at, say, U_6 or U_7. A " backawrd " farmer in the U_1 to U_4 region is also possible, although he is more correctly labelled as " very backward," since he is unable to tell that he is hungry. " Backward " farmers could also be analysed, but, since ignorance of new consumption opportunities is likely to be coupled with ignorance of new production possibilities, this would not be very useful.

MONETARY POLICY IN AN INFLATIONARY ECONOMY*

A Case Study of the British Experience 1951-57

PART ONE**

I. *Introduction*

1.1 The autumn elections of 1951 in Britain resulted in victory for the Conservative Party and the same year withnessed a revival of monetary policy, in the fight against inflation. Hitherto, maintenance of a cheap money policy had been the objective of monetary management and to that end the treasury bill rate (the rate at which the agent of the Bank of England called "the special buyer" was prepared to take up the treasury bills offered by the money market) had remained pegged at the low level of ½ per cent, even though the authorities had given up attempts to control the long-term interest rates after the failure of the Daltonian policy, in 1947, to lower the long-term rate of 2½ per cent. The pegging of the treasury bill rate implied that subject to the availability of treasury bills, the clearing banks could receive at a fixed rate an unlimited amount of accommodation from the Bank of England in their efforts to add to the volume of credit supply. Indeed, the banks were faced with a situation where they had both the ability as well as the incentive to do so. The ratio of advances to deposits (and advances are one of the most lucrative assets) which stood at 55 per cent in the inter-war period had fallen to 16.4 per cent in 1945 and rose barely to 26.7 per cent in 1950[1]. During the war, there had been a massive increase in bank liquidity, (that is, the ratio of cash, treasury bills and short loans to the discount market to deposits) and the banks had all the inducement to expand the volume of their advances by selling their treasury bills to the "special buyer", because the return on advances was far greater than the interest income on treasury bills. Further, in disposing of their treasury bills, the commercial banks were not to suffer any capital loss so long as the "special buyer" stood ready to take up any number of treasury bills at the pegged rate of ½ per cent. If one understands by monetary policy the manipulation of cost and availability

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[1] Harry G. Johnson, "Some Implications of Secular Changes in Bank Assets and Liabilities in Great Britain." *Economic Journal*, September, 1951.

of credit, then it was not until november 1951 that it was "rescued from the scrap-heap." (Except for the unorthodox device of the Chancellor of Exchquer's 'requests' to the banks to limit the volume of their advances). Faced with the post war inflationary situations, the Labour government had relied exclusively on disinflationary fiscal policy and direct, physical controls.

1.2 Various factors had combined to bring monetary policy into disfavour in the early post-war years: firstly, there were the theoretical considerations arising out of Keynes' theory, casting doubts on the efficacy of flexible interest rate policy as a controlling device ; secondly, it was felt that monetary policy was not selective enough to be helpful in a situation of post-war reconstruction, with the attendant need for a 'stimulus here, a brake there' rather than an overall contraction ; thirdly, there was a general swing in favour of 'socialistic' policies, with their emphasis on 'planning' rather than price mechanism ; and added to these was the fear that soon after the completion of post-war reconstruction, the capitalist world would slip back into a depression and it was felt that cheap money policy would exercise a helpful influence in that sort of situation. By 1951, however, the continued inability of fiscal and physical controls to check an inflationary situation had begun to weaken the faith in them as exclusive controlling devices. Then, there was an intense political pressure from the more vocal sections of the population to reduce the 'crippling' burden of taxation, which burden had been mounting even in the post war years. All these factors expressed themselves in the form of a swing to the Right in 1951 elections and the conservative party, in order to fulfil its election pledges of the tax cuts, felt that some part of the load could be taken off the shoulders of fiscal policy and shifted on to monetary policy. There was also the conservative abhorrence of direct, physical controls as smacking of 'totalitarianism'—being bad on philosophical ground, as well as on the basis of the alleged practical experience of the post-war years. It was against this background that monetary policy was revived in November, 1951 to meet the serious balance of payments crisis.

2. *Initiation*

2.3 By 1950 it was believed that Britain had successfully completed the phase of post-war reconstruction and hence it was decided by the British Government to dispense with the Marshall aid. 1951, however, saw another severe payments crisis. The payments crisis of 1951 had many causes—some were of an extraordinary nature (like the loss of invisibles from the Iranian oil) while others had their roots in the internal inflationary pressures which had been intensified by an over-ambitious rearmament programme. In the post-Korean stockpiling boom, prices of some of the commodities (like rubber, tin, wool) produced by the overseas sterling area countries had risen very high

and accordingly the Gold and dollar sererves were up by $1,612 million in 1950 to a record figure of $2,300 million at the end of 1950. The reserves having further risen by $458 million in the first quarter of 1951 and by $109 million in the second quarter, fell by $598 million in the 3rd quarter of 1951. In October, 1951 reserves were being drained at the dangerous monthly rate of $320 million.[2] In addition to the speculative forces, Britain's own balance of payments deficit and drawings by the overseas sterling area countries of their accumulated balances were contributory factors in causing heavy drain on the reserves. Britain's balance of payments on current account turned from a favourable balance of £221 million in 1950, to a deficit of £122 million in the first half of 1951, and she had an unfavourable balance with all the major trading areas except the overseas sterling area and there too her surplus was reduced from £218 million in 1950 to a bare £46 million in the first half of 1951.[3] In the first half of 1951, the effects of a deterioration in Britain's balance of payments, on reserves, were cushioned because of the continued high earnings of the overseas sterling area from the sale of primary products —whose prices, however, had started falling by March 1951. In the second half of 1951, to an unfavourable turn in Britain's own balance of payments, were combined some other adverse factors—the fall in the prices of primary products of the overseas sterling area checked the rise in the value of their exports at a time when these countries had started making use of their recently accumulated sterling balances for additional imports and then there was the unexpected Iranian oil dispute, leading to a fall in invisible earnings and the import of dollar oil. In the month of October, 1951, the reserves were being drawn at the dangerous monthly rate of $320 million. It was against this background that various disinflationary measures were announced by the Chancellor of the Exchequer in his opening speech to the Parliament on November 7, 1951.

2.4 The measures of November, 1951, envisaged external economies of $350 million to save the pound, and for that purpose, Britain returned to the quota system for imports and she withdrew from the liberalisation policy then being pursued as part of Britain's obligations under the OEEC code of liberalisation. There were also cuts in domestic investment in machinery and vehicles to make available these goods for the foreign market, there were the purchase tax restrictions and more stringent instructions to the Capital Issue Committee and to the banks for not lending for capital purposes. At this request, the British Bankers Association took an unusual step in the form of a letter to the *Times* warning the public of credit stringency.

[2] *The Banker*, January, 1952.

[3] M.S.O.; *Economic Survey*, 1952.

2.5 A supplement to these measures was the revival of the traditional monetary policy. Since the Chancellor did not believe "that in the present circumstances monetary policy by itself can have decisive results" it is no wonder that at this stage of its initiation, monetary policy was cast for a modest and almost symbolic role. The monetary measures of November 7, 1951 included :

(a) a rise in the bank rate from 2% to 2½%

(b) the unpegging of the Treasury Bill rate

(c) a funding operation to mop the surplus liquidity of the banking system.

2.6 A rise in the bank rate is the classical weapon to fight an inflationary situation. There is a tradition in the London money market whereby other money market rates move in sympathy with changes in the bank rate. Accordingly, the clearing banks raised their rates for call loans secured against the treasury bills by ¼ per cent to ¾ per cent, for those secured against bonds by ⅜ per cent to 1⅛ per cent and for loans secured against first class commercial bills rates were raised by ½ per cent to 1¼ per cent. They also raised the interest allowance on deposit accounts by ¼ per cent (to ¾ per cent). Similarly, the rates charged by the Public Works Loan Board to the local authorities were also revised upward, though the Building Societies Association recommended no change in rates to its members.

2.7 The way in which a rise in the bank rate acts as a deterrent to the demand for borrowing is a familiar argument. However, it is doubtful if at this occasion, the rise in the bank rate by half a percent was meant to convey anything but a symbolic gesture. The change being so small, it could not lower very much the demand for credit (by raising the cost of borrowing). This conclusion is all the more significant because simultaneously with an increase in the bank rate, a new rate for 7 days' loans from the Bank of England secured against treasury bills (traditionally, this rate used to be ½ per cent. above the bank rate) was announced ½ per cent below the bank rate. The loans secured against first class commercial bills were, of course, to pay the bank rate. It hardly requires any explanation that so long as the banking system had an ample supply of treasury bills, it was the lower of the two rates that was to exercise a determining influence over other market rates. This discriminating measure thus reduced the possible deterrent effect of the rise in bank rate to 2½ per cent. This discrimination was intended to cushion the Treasury against a rise in interest rates, especially a rise in the tender treasury bill rate. With a huge growth in the floating debt, the Treasury had to face the problem of the increasing cost of the debt whenever interest rates rose. By minimising the effect of bank rate changes on the treasury bill rate, this discriminating measure sought to combine the maxi-

mum of restraint on the private sector to that of cushioning the Treasury against the rise in interest rates.

2.8 Though a sympathetic rise in money market rates took place following an increase in the Bank Rate, the authorities realised that the price elasticity of demand for credit might not be sufficiently high to bring about a desired contraction in the volume of credit. Hence it was decided to act directly on the money supply, that is, to create conditions whereby the chief suppliers of money—the commercial banks, would be deterred from expanding credit. The unpegging of the treasury bill rate and the restoration of initiative for dealing in that market to the Bank of England, were the steps in that direction. So long as the Treasury Bill rate remained pegged, the banks were assured of an unlimited accommodation (subject to a sufficient supply of treasury bills with the banks) from the Bank of England at a fixed rate. Now for the first time, the banks were faced with the prospect that the needed relief might have to be got at a penal rate and that this rate itself might be a fluctuating rate—thus introducing a fear of capital losses. It was hoped that this fear will have a deterrent influence on the banks' desire to expand the volume of their advances by disposing of their Treasury Bills. In actual practice, however, in this first phase of initiation, the Bank of England pursued a lenient policy and the market was not often driven "into the Bank."

2.9 There was also a more direct attack on excess bank liquidity, because it was felt that so long as the banking system possessed excess liquidity (the ratio of total liquid assets cash and money at call and treasury and other first class bills to total deposits) monetary policy would not exert its full influence in controlling the volume of credit. No doubt, the unpegging of the treasury bill rate had introduced an element of capital uncertainty, yet so long as there remained a wide margin between the yield on advances and on treasury bills, the banks had the incentive to add to the volume of their advances by selling treasury bills—thus adding fuel to the inflationary fire. Since it was not possible to raise the treasury bill rate sufficiently to bridge the gap between this rate and the rate on advances because of adverse repercussions on the interest cost of national debt, a funding operation to mop the surplus liquidity of the banks was thought to be the possible way out. Accordingly, all holders of treasury bills were offered an exchange to the amount of £1,000 million into 1¾ per cent Serial Funding Stock with lives of one, two and three years. Subscriptions were to be limited to the bills with not more than 60 days to run and were to be in amounts of not less than £5,000. It was clear from the terms of the offer that it was directed primarily at the banks (the bank hold bills with short maturity dates, the longer one being held by the Discount market) and the commercial banks got £5,000 million of treasury bills converted into the new

stocks. As a result of the funding operation, the liquidity ratio fell from 39 per cent in October 1951 to 32 per cent in November. Obviously, the aim of funding operation was to bring about a given degree of monetary stringency with a minimum rise in interest rates. The force behind a funding operation is derived from the fact that the banks in fixing the volume of credit pay attention not only to the primary cash ratio (ratio of cash to deposits) but also to the secondary reserve ratio (ratio of cash plus bills plus money at call to deposits). Indeed, it has been found that the central bank may not be able to control the volume of credit were it merely to pay attention to the supply of cash to the banks because subject to the availability of elegible assets the banks can always go to the central Bank and get their cash reserves replenished (this arises because of the function of the central Bank as the lender of the last resort). In the old days, when the commercial bill was the chief liquid asset a rise in interest rates had an indirect yet powerful effect on the supply of commercial bills—a rise in interest rates made it more costly to issue bills and those issued were sought to be diverted to centres cheaper than London. The mechanism operated so smoothly that in the text-book explanation of the credit machanism, exclusive attention was given to the first liquidity rule, that is, the primary cash ratio, to the neglect of the secondary reserve ratio. Nonetheless, in the altered circumstances of today, the chief liquid asset at the disposal of the banking system is the treasury bill whose supply depends more on goverment policy than on the state of interest rates. For this reason, when the interest rates rise, there is no automatic contraction of the supply of treasury bills. If their supply has previously been excessive, commercial banks can take a part of their bill portfolio for rediscounting at the Bank of England and use the proceeds to expand advances should the demand for credit still remain buoyant. Such a situation can lead to a dangerous expansion of credit if the only operative rule were the cash ratio rule. Hence, in recent years, the emphasis has shifted to the second liquidity rule and the authorities have been insisting for a "liquid asset ratio" of 30 per cent. The funding operation in this instance was meant to destroy the credit potential of the commercial banks represented by an abnormally high liquid assets ratio of 39 per cent in October 1951 by bringing it back to the more normal level of 32 per cent in November, 1952. Of course, surplus liquidity could also have mopped up by empowering the Bank of England to vary liquidity ratios of the commercial banks as and when the situation so demanded. In some ways, this would have been a better device than the funding operation—the effect on bank liquidity would have been more direct and predictable and also the shock effect of such a measure might have influenced the prevailing state of expectations. However, this measure was thought to enhance the 'arbitrary' executive interference with the price mechanism and hence was incompatible with the ideals of a "free" economy.

2.10 All these combined measures, however, failed to produce an immediate effect on the level of gold and dollar reserves and the reserves ran down by $934 million in the last quarter of 1951. The drain continued in the new year—the loss being $299 million in January and $266 million in February. It was this continued gloomy outlook for reserves that led to a further steep rise in the bank rate in March, 1952 to 4 per cent and the Chancellor of the Exchequer in his budget speech announced plans for bringing about an improvement of £550-600 million in Britain's external account in the financial year 1952-53, by various measures, like a cut in domestic investment and diversion to exports of some £150 to 200 million of plant, machinery and vehicles as well as cuts in the imported stocks.

2.11 As good luck would have it, the year 1952 closed with a favourable swing in Britain's balance of payments. From a deficit of £402 million in 1951, the balance of payments on current account showed a surplus of £170 million in 1952—an improvement of £572 million over 1951.[4] This was despite the fact that some of the more favourable prospects that the Chancellor was counting upon to help in improving the balance of payments did not materialise. For example, he had expected the real national product to rise by £250 million in the financial year 1952-53 as a result of an improvement in productivity of 2.5 per cent and it was hoped that a part of the increase in product could be diverted to exports. Actually, however, industrial production in 1952 fell by 3 per cent. And while presenting the 1952-53 budget he had expected the rise in real government expenditure (in terms of 1951 price) to be of £150 million, actually due to military commitments overseas, it rose by £325 million and while he had budgeted for an "above the line" surplus of £511 million for 1952-53, the actual surplus was only £88 million.

2.12 One naturally asks: what contributed to this significant recovery in the balance of payments? Was it mainly due to a deliberate disinflationary policy of the government? If so, what role had monetary policy to play in bringing about this result? No doubt, the disinflation of 1952 had its part in reducing the demand for imports especially for building up stocks, but this disinflation itself was more the result of import cuts by the overseas sterling area rather than a determined government policy. This should be obvious from the fact that the government did not expect its policies to do anything except rearrange manpower by shifting people from consumers' goods to export industries and the Government had banked upon an expected 2.5 per cent rise in productivity as a result of better allocation of manpower. In the event, however, industrial production fell by 3 per cent and this factor reduced the demand for imported stocks, in addition to the direct import cuts already announced. The fall in industrial

[4] H.M.S.O. *Economic Survey*, 1953.

production was due more to the stringent cuts of the overseas sterling area in its imports and the internal disinflationary measures had only a modest contribution thereto. Through various measures the government had hoped to release £350 of domestic resources to improve the balance of payment in 1952-53. In the event, resources worth only £170 million were made available for that purpose. And if still the balance of payments improved to that extent, it must have been due to an unexpected favourable shift in the terms of trade, this factor alone being responsible for £330 million improvement in the balance payments in 1952 as against the expected improvement of £150 to 200 million for the whole of the financial year 1952-53 from this source. Thus it is evident that improvement in the balance of payments was to a great extent, due to sheer good luck and direct import cuts announced in 1951.[5] To the extent that internal disinflation was also a contributory factor, this disinflation must be attributed more to cuts in the overseas demand rather than deliberate government policy. If the government policy had only a secondary role to play, then monetary policy must have made a still smaller contribution to the end result. This is not to deny the role of government policy, monetary policy included—had these policies not had a disinflationary bias, the balance of payments would not have improved to the extent that it did. But this only shows that its contribution was mainly a restraint on further rise in domestic expenditure rather than a cut in the existing expenditure. In restraining demand, monetary policy may have exerted some influence in so far as the volume of advances fell by £200 million from November, 1951 to November 1952, though it is difficult to estimate the extent to which this fall in the volume of advances was due to the revival of the orthodox monetary techniques or the direct 'requests' of the Chancellor to the banks. The fall in advances may have exercised a restraining influence on demand though if the above analysis of the causes of disinflation is to be accepted, this fall in the volume of advances was mainly due to a prior fall in production that took place as a result of oversea import cuts, the consequent smaller need for accumulation of stocks and also because of a fall in import prices.

3. *Relaxation and Inflationary Pressures 1953-54*

3.13 The improvement in the balance of payments continued throughout 1953 and the first half of 1954, the balance of payment surplus (excluding defence aid) being £115 million in 1952 and £148 million in the first half of 1954. The improvement in the balance of payments is significant because it took place against the background of U.S. recession of 1953-54 and rising output at home (industrial output rose by 6 per cent in 1953 and 6½ per cent in 1954). With these cheerful prospects in view, the Chancellor of the Exchequer felt con-

[5] *The Banker*, May, 1953 'Was Britain Lucky'?

fident enough to announce various tax concessions costing £169 million to the exchequer in the financial year 1953-54. There was a deliberate attempt to boost up domestic investment by restoring initial allowances and abolishing the excess profit tax. Consumption was also sought to be stimulated to take up the then existing slack in the economy, by such measures as reduction in the purchase tax and a six pence cut in the standard rate of income tax.

3.14 The prevailing mood of optimism was further reflected in the bank rate reduction from 4 per cent to 3½ per cent in September 1953, and the simultaneous ending of discrimination in favour of 7 days' loans from the Bank of England secured against the treasury bills, a measure introduced in November 1951 to protect the Treasury against the hardening of money market rates. Hitherto, the bank rate was the minimum rate at which the Bank of England rediscounted approved bills—there was, however, the above mentioned special rate (½ per cent below the Bank Rate) for seven days loans secured against treasury Bills. This latter rate was the really penal rate and was the measure of the sanction that monetary stringency could wield upon it. As such, the change was merely a technical one, unifying the two rates at 3½ per cent but a reduction in the bank rate has favourable psychological repercussions and the Stock market did not fail to interpret it in that light.

3.15 The improvement in the balance of payments was the occasion for further relaxation of physical controls on internal and external trade. More commodity markets were reopened, there was relaxation of import licencing with greater freedom for importers to buy from the cheapest sources of supply, there was the reopening of the Liverpool future market and lifting of restrictions on the import of dollar cotton. Meanwhile, the Sydney Conference of the Commonwealth Ministers reaffirmed their aim "to establish with other countries a wider system of trade and finance in which the convertibility of sterling is an essential part" and rejected the view that any solution of our problems can be found in the creation of a closed system of discriminatory arrangement. A significant event after the reopening of the London Foreign Exchange Market in December, 1951, was the reopening of the London Gold Market in March, 1954 and the greater extension of the area within which sterling is freely and automatically transferable by unifying all sterling (other than the blocked sterling) owned by non-residents outside the American account Area in a single category of Transferable account area.

3.16 The strong position of sterling led to a further reduction in the Bank Rate to 3 per cent in May, 1954. At this time, an unwanted flow of 'hot' money led to an extreme hardening of sterling and the authorities took this measure to ward off such an inflow. Internally,

to further stimulate investment initial allowances were replaced by Investment allowances and in July, 1954 restrictions on hire purchase were withdrawn.

4. *Inflationary Pressure Once Again, 1955-56*

4.17 In the second half of 1954, the balance of payments on current account (excluding defence aid) turned from a surplus of £148 million in the first half to a deficit of £38 million (however, allowance should be made for the abnormal events like the dock strike in October 1954 which retarded the shipment of exports and also the annual interest obligations on the dollar loans falling due in the second half of the year). Meanwhile, various internal measures to boost up investment were gathering momentum and to forestall this inflationary outburst the bank rate was raised to 3½ per cent in January, 1955, yet in February, sterling remained very weak and the excessive discount on transferable sterling had made commodity shunting operations profitable to the foreigners, adding to the strain on reserves as well as depriving the British exporters of their export markets. To check this speculation, the bank rate was further raised to 4½ per cent on February 24, 1955, and simultaneously the Exchange Equalisation Account was authorised to intervene in the market for transferable sterling. Additional controls on terms of hire purchase were imposed and the banks were requested, along with instructions to the capital Issue Committee, to examine more stringently the applications for hire purchase finance. Meanwhile attempts were made to make the structure of interest rates in the market more competitive. In the case of clearing banks' deposit rates and their minimum charge for short term-loans to the money market, the practice whereby the two rates were fixed at the same level was given up, in favour of the earlier practice that the short-term loan rate should always show the banks a profit over their published deposit rate. Since the market rate of discount for both the bank and treasury bills depended on and was normally above the short-term loan rate, the traditional practice promised a larger profit margin on the banks' bill portfolio.

4.18 By April, the first speculative drain on reserves seemed to have passed away but the internal inflationary pressure showed no sings passed away but the internal inflationary pressure showed no signs of weakening and in the first half of 1955, advances rose by £289 million—the largest increase to occur in any previous half year. Yet it is surprising that the budget proposals for the year contained tax reliefs of £134 million in 1955, the Chancellor's plea being that "excessive taxation and inadequate incentives were having very damaging effects" and that "only by liberalising the human spirits to give and do its best that our island people can survive." A noble ideal indeed but what a wrong time chosen to implement it!

4.19 In July 1955, the percentage of unemployment stood at 0.9 per cent, the lowest since the war. The government, thereupon, reacted by raising the minimum down payments on hire purchase from 15 per cent to 33½ per cent for many commodities and a new request was made to the banks for "positive and significant reductions in advances over the next few months." There was an emergency autumn budget and cuts in the housing subsidies; slowing down of certain capital programmes of the public sector, rise in the purchase tax and the raising of the tax on distributed profits from 22½ per cent to 27½ per cent were some of the measures announced to meet the situation.

4.20 All these measures, adopted since January 1955, were slow to produce an immediate result. No doubt the advances of the clearing banks fell by £335 million in the second half of 1955 yet the effects of monetary stringency were to be witnessed only in 1956 than in 1955. The year saw a 15 per cent rise in the value of imports (on a trade account basis) while exports rose only by 8½[6] per cent. The major part of the increase in imports was concentrated on industrial materials like steel, fuels and food. An increase in the import of industrial materials was to be expected in an economy where manufacturing fixed investment was up by nearly two-thirds over the previous year and in an 'overloaded' economy, the marginal import content of an expansionary rise in activity was bound to be higher than the average import content because of the difficulties in increasing, at short notice, the domestic supplies. Moreover, there was bound to be a rise in food imports, 1955 being the first post-war year completely free of rationing and also the level of stocks in 1954 was very low and required replenishment. All this would not have caused a severe drain on reserves if the extra supplies were to be had from the rest of the sterling area, but in the event, extra supplies were had mostly from the non-sterling area countries—the imports from the rest of the sterling area rose only by 5 per cent, while the dollar area imports rose by 36 per cent, O E E C imports were up by 17 per cent and imports from the rest of the non-sterling area went up by 18 per cent (with the practice of settling increasing amounts of deficit in the O E E C by gold payments, a deficit with the O E E C countries has more or less similar effect on the reserves as a deficit with the dollar area). Since the various measures were slow to produce the desired effect, the year closed with an overall deficit of £79 million in the balance of payments on current account.[7] Therefore, to intensify the anti-inflationary drive, the bank rate was raised to 5½ per cent in February, 1956—this being the highest level (till then) since the morrow of the collapse of gold standard in 1931.

[6] H.M.S.O. *Economic Survey*, 1956.
[7] H.M.S.O. *Economic Survey*, 1956.

5. *The Brief Respite and the Fight Again, 1956-57*

5.21 The year 1956 witnessed a relaxation of inflationary pressure, despite the Suez debacle. The balance of payments on current account improved from a deficit of £79 million in 1955 to a surplus of £233 million in 1956.[8] The major cause of this improvement in the balance of payments was the check to the growth of imports. The volume of imports fell slightly, although higher import prices brought the value of imports to £3,889 million, a small increase over the 1955 level. This check to the growth of imports must in turn, be attributed to the disinflationary policies being pursued since 1955, though some contribution was also made by an improvement in the terms of trade of 2 per cent over 1955. The disinflationary policies had produced a situation, whereby, the growth in real gross national product was checked in 1956. With stable real gross national product, the import bill was also stable while the exports went up by 9 per cent in value (there was a 4 per cent rise in the prices of exports).

5.22 This improvement in the balance of payments took place despite the Suez crisis, which fortunately, did not produce any serious adverse effects on the economy, except for the speculative drain on sterling in November, 1956 and which practically came to a halt in December, with the various measures taken by the Government to strengthen the reserves (these measures included borrowings from the I.M.F. and a line of credit from the Export-Import Bank and the application for a waiver of the interest due at the end of the year on the post-war dollar loans).

5.23 One naturally asks: what importance should be attached to the role of monetary policy in bringing about this improvement? Of course, the main reason for an improvement in the balance of payments was the check to the growth of imports, consequent to the check on the rise of the Gross National Product. An analysis of the various pressures on the economy shows that there was first, a slackening of the rate of growth of gross fixed investment in 1956. Gross fixed investment rose by £80 million (at 1955 prices) in 1956 as compared with the rise of £160 million in 1955. Similarly, there was a check to the growth of personal expenditure in 1956—in real terms it was almost stable at 1955 level. Though total personal incomes rose by £1,200 million in 1956 (rise of 8 per cent over 1955); yet personal expenditure was up only by £600 million and almost the whole of it was accounted for by a rise in prices. An assessment of the contribution of monetary policy to the relaxation of the inflationary pressure must, therefore involve an analysis of the forces which led to a slowing down of the rate of growth of fixed investment and stability of the final consumer expenditure.

[8] H.M.S.O. *Economic Survey*, 1957.

5.24 What were the reasons for the slowing down of the increase in gross fixed investment in 1956? Was it due, mainly, to the lack of availability of funds? No doubt, the advances of the members of the British Banker's Association fell by £335 million in the second half of 1955 (though about half this fall represented repayments by public corporations out of the proceeds of new issues) and in 1956 advances to the private sector failed to increase (total advances did rise by £62 million but more than the entire increase was in the form of additional borrowings—£79 million, of the public corporations). Financial difficulties may have been important in those sectors of the economy, where dependence on the banks for overdraft facilities is relatively more important than other sources of finance. Yet our impression is that in the manufacturing industry at least (and here also there was a slowing down of growth of investment) financial bottlenecks were not the most important influence at work. The financial resources (as represented by the undistributed profits after tax and borrowing by the new issues but excluding tax reserves) rose from £1,676 million in 1955 to £1,749 million in 1956. And in any case, the squeeze on advances could not materially reduce the supply of funds at the disposal of the company sector, because of its ample liquidity when the squeeze began. The 707 company accounts tabulated by the Economist published in the second half of 1955, with an average balance sheet date not far from the middle of the year, recorded cash and gilt edged securities at the disposal of these companies that together were nearly four times the size of outstanding advances. This smallness of the outstanding overdrafts as compared with the gross liquid assets when the squeeze began should serve to emphasise that a 10 per cent reduction in advances could hardly exercise a serious deterrent influence on company liquidity.[9] However, as is obvious from the quarterly statistics for the members of the British Bankers' Association, this credit squeeze was not applied uniformly in all directions and certain categories of manufacturing—ship building and unclassifiable industry and trade showed a rise in advances of 6 per cennt over the year to May, 1956. No doubt, the credit squeeze was on since July, 1955 but the company sector was able to reiceive compensatory finance by an increase in ordinary share issues in the second half of 1955 over the first half (despite the fall in capital values). And when the difficulties in the ordinary share market increased, (probably under the pressure of credit squeeze) the companies turned to loan finance in the form of debentures. This they were encouraged to do because of the very low rate of gearing that prevailed in 1955, when net Debenture interest accounted for only 4 per cent of net profits after tax and preference dividends took only a further 4 per cent. On the supply side, there were the institutional investors like the life insurance companies and the pension

[9] H. B. Rose, "Monetary Poliçy and the capital market 1955-56" *Economic Journal*, September, 1957.

funds whose resources have been growing at the yearly rate of £500 million, ready to take up debentures at very attractive rates of interest. These investors are not influnced to a great extent by monetary fluctuations in the capital market but rather they take into account a longer prospective and at this time they took advantage of the opportunity of supplying funds at a rate of interest higher than the normal long run level. In addition, if one assumes that there is a lag between the raising of funds and the launching of an investment project, thus even if financial stringency was an important factor at work, its influence should have been felt more in 1957 rather than 1956. As such, lack of availability of funds cannot be the main explanation of the slowing down of growth of investment in 1956.

5.25 What then were the restraining influences at work ? Of course, there are the psychological implications of a stringent monetary policy in inducing a framework of expectations not conducive to expansion, and to some extent, this factor might have also been at work. Yet this also cannot be the major explanation in so far as the contraction in the growth of investment was confined only to a few sectors. The major influences in our opinion were the cuts in the programmes of the public corporations, and a set back to the expansion programme of the motor industry, because of the stringent restrictions on hire purchase terms and also the fact that the rate of investment was growing for the last three years and the first phase of expansion being nearer completion, the business firms, to take stock of the situation, wanted a brief period of respite, before launching upon a new expansionary drive. Thus monetary policy seemed to have played only a moderate role in checking the growth of Investment in 1956.

5.26 Coming to the consumers' expenditure, it once again appears that restrictions on hire purchase were more important than any other factor in bringing about a stability in consumers' real expenditure in 1956. Of course, one can argue that restrictions on hire purchase finance were the real force behind a contraction in the outstanding hire purchase debt of £100[10] million in 1956. But this does not seem to be the really important factor for till April, 1956 there was a wide-spread growth of hire purchase finance houses, with capital below £50,000, which did not require a prior approval of the Capital Issues Committee and when that loophole was closed in April, 1956, the hire purchase finance houses turned to the public by offering as high as 7 per cent rate of interest on medium term deposits. To a great extent, therefore, hire purchase companies were able to get round the credit squeeze. The fall in hire purchase sales must therefore have been due to the more direct restrictions on the terms of hire purchase and the increase in purchase tax on various household ap-

[10] J.R.H. Cuthbertson, 'Hire Purchase in the U.K.,' *London and Cambridge Economic Bulletin*, no 21.

pliances. Hire purchase sales play an important part in some of the British industries—hire purchase sales account for 40 per cent of the total sales of radios, 50 per cent of hard furniture sales, 50 per cent of the sales of television sets, 20 per cent of the motor car sales and 30 per cent to 40 per cent of the sale of motor cycles.[11]

5.27 Thus the conclusion which emerges from the above discussion is that by and large the disinflation of 1956 was only to a small extent due to a stringent monetary policy. Though it must have played a more important role than it did in 1951-52, yet it could not claim to be a major instrument of economic stabilisation.

5.28 The relaxation of inflationary pressure led to a wide spread expectation of a reduction in the bank rate at the beginning of 1957, to which Prof. Harrod added his powerful voice on the plea that the investment of the past three years had expanded productive capacity to a great extent, and that unless demand were allowed to be expanded, we would be in for a recession. The expectation of a reduction in the bank rate led to a fall in the money market rates and this expectation was confirmed by a reduction in March, 1957, of the Bank Rate to 5 per cent. The Government was obviously adopting a cautious course of action, it was yet insisting that credit restrictions were not to be relaxed. The budget for 1957-58 also contained some tax reliefs. The gold and dollar reserves rose by $76 million in the first quarter of 1957 and by a further $172 million in the second quarter of 1957. In July, they fell by $14 million and in August there was a loss of $225. Alarmed at such a steep fall in reserves, the government reacted by raising the bank rate from 5 per cent to 7 per cent in September, its highest level for more than thirty six years, and a rise larger than any since 1847. Simultaneously, instructions were issued to the banks that the average level of bank advances during the next twelve months should be held at the average level of the last twelve months. Investment in the public sector was sought to be stabilised in the coming two years at the level of 1957 and there were the usual instructions to the Capital Issues Committee to scrutinise more critically the applications for borrowing.

5.29 While the British government was pursuing a disinflationary policy, the clouds of a recession were gathering momentum in the U.S.A. Fortunately, the recession did not spread its influence immediately to the European economies and the year 1957 closed with a balance of payments surplus of £237 million on the current account. This improvement was, once again, made possible by the check to the growth of production—industrial production in 1957 was only

[11] J. R. Cuthbertson, *Ibid.*

slightly higher than 1955 though there had been a high rate of investment for the last several years. There was also an improvement in the terms of trade of 3 per cent contributing to the payments surplus. The great upsurge in manufacturing investment came to an end in 1957 and its place was taken up by public investment in fuel, transport and communications. The investment boom had added greatly to the productive capacity and the authors of the Economic Survey, 1958 forecast a decrease in demand relative to industrial capacity for the coming year.

5.30 It was against this background and the deepening recession in the U.S.A. that the bank rate was reduced to 6 per cent in March, 1958 and on 22nd May, 1958 there was a further cut of ½ per cent. As to what exactly are the prospects for sterling in 1958 much will depend on the course of the US recession about which it is difficult to make any prediction without a close knowledge of the U.S. economy.

Chandigarh MANMOHAN SINGH

MONEY, BANKING AND CREDIT IN NEW ZEALAND[1]

AMONG the various contributions made to economic theory and policy the part played by *Royal Commissions*, appointed from time to time, is by no means insignificant. *Royal Commissions* have a tradition of their own. Appointed at regular intervals, or more particularly at significant turning points in economic history, they have reviewed with insight, theoretical and applied aspects of economic problems of the day. Writing about one such *Report* one is strongly reminded of the *Committee on Finance and Industry* (popularly known as the MacMillan Committee) the Colwyn Committee on taxation and the Royal Commission on Population appointed after the end of the Second World War. *Report of the Royal Commission on Monetary, Banking and Credit Systems* (hereinafter referred to as the Report) of New Zealand is an important contribution to this category of Royal Commission Reports.

Economy of New Zealand

New Zealand is one of the export economies of the world. Among the attempts to study the New Zealand economy mention must be made of C.G.F. Simkin's Work.[2] Simkin prefers to describe the New Zealand economy as a "dependent economy." According to him, "The distinguishing features of a dependent economy are that external transactions account for a relatively large part of the social income, and that it is too small a consumer of the world's exports to have much influence upon the incomes of the countries which provide its principal markets."[3] In the same study Simkin examines the direct variation of notes and deposits, and the marked inverse variation of the overseas assets, with loans and investments. His main purpose was, however, to examine the nature of fluctuations in the New Zealand economy. He concludes by tracing six major periods of economic development. In these, banking policy was the most important factor. Elucidating this he writes, "If bank loans had little influence upon longer fluctuations, they dominated no less

[1] Being a review article based on the *Report of the Royal Commission on Monetary, Banking and Credit Systems*. (By Authority: R. E. Owen, Government Printer, Wellington, New Zealand 1956. pp. 500. Price 16*s*.)

[2] *The Instability of a Dependent Economy—Economic Flucutuations in New Zealand* 1840-1914. (Oxford 1951).

[3] *Ibid.*, p. 5. Continuing the same argument Simkin gives the following equation to bring external transactions into greatest prominence.

Social Income = Consumption + Home financed Investment + Net External Receipts — Dependent Imports.

Another important study of an 'export economy' is H. C. Wallich's *Monetary Problems of an Export Economy—Cuban Experience* 1914-1947 (Harvard—1950).

than half the upswings and downswings after 1860. During the cycles of the seventies bank loans were not only the principal factor, but initiated cyclical movements as well as providing their main fuel," and later on, " The problem of stabilization in a dependent economy has, ... two aspects—to stabilize internal money incomes and to stabilize the flow, or else the expenditure of external receipts."[4] Simkin's study in this manner emphasizes the importance of sound banking and credit policy as one of the contra—cyclical measures.

Prior to the present *Report* the report of the parliamentary Committee in 1934 reviewed events prior to 1934 and the operations of the banking system. New Zealand's banking system took its present form with the establishment of the Reserve Bank of New Zealand by the Act of 1933.[5] The circumstances leading to the appointment of a Commission with Arthur Tyndall as its chairman, were in many senses similar to the post-war monetary experience in many countries. These are reflected in the following objectives set out in the Commission's terms of reference.

(a) The fostering of a greater degree of stability in prices.
(b) The maintaining of full employment of labour.
(c) The ensuring of the healthy development of natural resources.
(d) The promoting generally of the economic, financial and social welfare of the people of New Zealand.[6]

Reflected in the above terms of reference are two important points which must be mentioned. Firstly, as we noted above, New Zealand is an export-economy and the " degree of stability of prices " is of special significance to her. The second point is of a much more general nature. The terms of reference cover questions on which monetary experts alone could not speak with authority. They—the terms of reference—indicate the manner in which the over all objectives of economic policy have become more and more inclusive through the post-depression and the war and post-war years. Questions like " maintaining full employment of labour "; include some social objectives of standards of living, equitable distribution of national income, side by side with the purely economic objectives.

Economic Review, 1934-1955

The report of the Parliamentary Committee on the monetary and banking system was published in 1934. The period since 1934 falls

[4] *Ibid.*, pp. 193-202.

[5] For details of the circumstances leading to this establishment see " Banking in New Zealand " C. G. F. Simkin being chapter 9 in *Banking in the British Commonwealth* Ed. R. S. Sayers. (Oxford, 1952).

[6] *The Report*, pp. 18-20.

into four well-marked phases and from the point of view of the development of New Zealand economy, is very significant. The four main phases are :

(a) 1934-35 to 1938-39: Recovery from Depression.
(b) 1939-40 to 1945-46 : World War II.
(c) 1946-47 to 1948-49 : Post-war reconstruction and recovery.
(d) 1949-50 to 1954-55 : The recent period of accelerated population increase and higher capital investment.

In the first phase, the most notable event was the severe fall in the net overseas assets of the banking system from £23 mill. to £7½ mill. due mainly to fall in export income and higher demand for imports.[7] Comprehensive import controls were introduced, as a result of this, in December 1938. But unaccompanied by any controls on spending of incomes internally this led to higher inflationary pressures. One could make a general observation that the inflationary pressures which were built in the economy about the beginning of the Second World War have remained in the economy since then. Favourable balance of payments during 1944 and 1945 to the tune of £28 mill. and £43 mill. respectively, only added to these pressures. Price control and other measures did not succeed until after 1942 when a more extensive stabilization scheme—which included apart from price controls, controls on maximum salaries and wages—was implemented. Thus, during 1939-1945 retail prices index rose by about 18 per cent. in New Zealand, compared with 28 per cent in the U.K. and 28 per cent in the U.S.A.

The difficulties of the early post-war years were characterized by shortages of raw materials and finished products in New Zealand, as elsewhere. From being 12 per cent in 1946, the percentage of national income devoted to capital formation rose to 18 per cent in 1949. Along with the drive for capital formation almost all the war-time controls were maintained, leaving for monetary policy a very minor, and indeed secondary role in the management of the economy. This has been the position of monetary and credit controls all over the world in the early post-war years. Working of selective credit controls channelled investments according to government policy. The success of the price stabilization policy was reflected in the appreciation of the New Zealand Pound, which now exchanged at par with the U.K. Pound, (the pre-war rate of exchange was £125 N.Z.=£100 U.K.).

[7] Though the government spending programme worked towards defeating unemployment the 1939 Budget observes, "……in the absence of an equally rapid expansion in production it led to an increase in imports and a drain upon the sterling resources of the Dominion." *The Report*, p. 23.

This checked rising export incomes and limited the effects in New Zealand of rapidly rising import prices. But the removal of stabilization measures brought about an almost continuous rise in prices intensified by forces like the Korean boom in strategic raw materials in which wool was not an exception. The index of retail prices rose by 11 per cent in 1951 alone. With the boom in woollen trade export receipts mounted up and a scheme of freezing one-third of the gross realization at the trading banks was implemented. However, the lending capacity of the trading banks was not put under control (by raising the reserve ratios). Therefore, even when the wool prices fell later on, other causes of inflation persisted. This was partly due to the fact that export incomes, other than through export of wool, remained high. The wool boom of 1950-51 was followed by heavy private imports. The balance of payments which was favourable to the tune of £39.1 mill. became unfavourable to the extent of £51.3 mill. The Reserve Bank was required to operate the exchange allocation scheme from April 1952. Latterly—i.e. after December 1954—the implementation of the scheme was less severe.

On the side of non-monetary factors, New Zealand experienced a 2 per cent annual rate of population growth during 1951-55. Rising birth rate and migration in the post-war years are the two factors contributing to this high rate of population increase. The gross national income of the country shows a rising trend since 1935 which at current prices was about seven times of what it was in 1934-35. Corrected for price changes the gross national income is three times of what it was in 1934-35. It follows naturally, that the volume of production is rising, particularly, in the last decade; the increase in the volume of factory production has been 64 per cent. With rapidly increasing population, however, the volume of production per head did not rise appreciably.

The figures relating to external trade reveal one important feature. Between 1935 and 1954 the index of the volume of imports rose by 143 per cent while the index of the volume of exports has increased by 33½ per cent. Such a position has been tenable because over the whole period since 1935, export prices have risen proportionately more than import prices. The improvements in terms of trade was the highest during the wool boom of 1950-51[8]. A situation of over-full employment of labour was affecting both the levels of prices and wages and increased wage rates were annnounced, from time to time, by the Court of Arbitration. During the same period we find gross capital investment (excluding change in stocks) as a percentage of gross national income slowly rising from 9 in 1933, to 16 in 1948 and 23 both in 1933 and 1955. However,the New Zealand economy's performance on the sav-

[8] See Table 1 at the end.

ing frontier is not commensurate.[9] Notable decline was recorded in the 'Small Savings' of certain classes and also in the accumulations in farm industry reserves. On the other hand, the Government surplus of revenue over expenditure offset this shortfall of savings. What is more important however, is that the shortfall of small savings is to be visualized against the background of heavy and increasing capital expenditure. A high level of savings would have helped in offsetting inflationary effects of heavy capital expenditure.

The picture of the New Zealand economy in 1955 was thus very different from the one in 1930. During the first half of the thirties, there was low capital expenditure, unemployment on a large scale, demand for imports at a low level resulting in an accumulation of foreign funds and the confidence in the economic future of the country at a very low level. In 1955, on the other hand, capital investment was high, level of income was high resulting in a high level of demand for imports, and export incomes were becoming. "In short," to quote the Report, "the outlook has changed from depression to prosperity, from severe unemployment to over-full employment and from deflation to inflation."[10]

Money and Credit in New Zealand

Money supply in New Zealand consists of coin and notes in circulation, deposits on current account of customers including the Government plus the unexercised portion of overdrafts granted by the trading banks to the customers.[11] In the case of New Zealand, the last category viz. unexercised overdraft, constitutes an important variable in the total money supply. Together with the current account balances held by the customers of the trading banks, these constitute an important part of the total inflationary pressure in the economy.[12] One notices that because of the peculiar importance of the unexcercised portion of the overdraft in the New Zealand economy the *Commission* are inclined to include this portion in their definition of supply of money. The mechanics of the working in the case of an overdraft are discussed by the Commission but one would like to offer a comment on this discussion. If unexercised limit of the overdraft is regarded as a part of supply of money, granting of an overdraft will instantaneously increase the supply of money, because the whole of the overdraft constitutes the unexercised limit at that moment. Conversly, if overdraft amounts are reduced all over, the supply of

[9] The Commission doubts the comprehensiveness of the statistics of private savings and hence these do not provide a reliable basis for drawing conclusions.

[10] p. 48.

[11] Government deposits are not included in definition of money in some countries (e.g. Canada, the U.S.A. and Ceylon). See *The Report, Appendix C* p. 236.

[12] For fuller details on this point see table 2 at the end.

money will decrease by the amount of this reduction. The distinction to be drawn here is between supply of money "proper" and supply of money in the "potential sense." The necessity of identifying the two would, in our view, arise only in the event of inflation and rapidly rising prices. Looking to the position that obtained in New Zealand 1935-1955 the largest part of the supply of money consisted of customers' current accounts with trading banks and the authorities to overdraw their accounts.[13] The amount of such authorities being unusually high the *Commission* appears to be not erring when they include these in their definition of supply of money. Nevertheless, the purist will not hesitate in asking a question, "How shall we describe such unexercised portions of overdraft in the event of deflationary tendencies ?"

The trading banks' lending as an important source of money supply appeared to some of the witnesses as a novel and recent phenomena. While in point of fact, "……trading banks' power to 'create money' depends on the fact that a large section of the community uses the banks' liabilities as money."[14] In this situation, the balance of payments—surplus or deficit—the extent of Reserve Bank's lending and the community's preference to keep its money in terms of deposits rather than notes and coin, determine the lending by banks. During an inflationary period what one would search for is not only the basis of credit creation but also the limits to this activity and the nature of controls to the same. The Reserve Bank can vary the reserve requirements, subject to a minimum of 7 per cent of demand and 3 per cent of time deposits. The Reserve Bank has also the power to vary the rate of interest at which it will lend to the banks. These are of course, the traditional weapons of credit control by a central bank. To these have been added in many countries, as in New Zealand, selective control of bank advance since 1942. Further, the purchases of Government Securities by the trading banks have been restricted. The trading banks increased their investment in Government securities from £5.2 mill. in 1936 to £36.1 mill. in 1943. The above mentioned restriction came into operation from 1943 onwards and the trading banks' holding of Government Securities fell to £11.7 mill. by 1950. The most probable reason which has prompted the Government to adopt this policy has been activation of inflationary forces when trading banks' investment in Government Securities in-

[13] It must be pointed out that in their definition of volume of money the Reserve Bank of New Zealand do not include the unused overdraft accounts, though they do not object to the *Commission's* approach. There is one phrase in the *Commission's* definition of money which is worth noting. "……money is anything which is *immediately available* and generally acceptable in payment for goods and services or in settlement of a debt." (our italics). It would appear that institutional peculiarities and practices govern these definitions from time to time. (*The Report Appendix C* pp. 236-237.

[14] *The Report, Section four*, p. 48.

crease.[15] Combined with the institutional set up of the short-term money market (New Zealand does not have a short term money market with Treasury bills etc. for investment by banks) this left advances as perhaps the only important asset for investment. The bulk of the increase in trading-bank advances has taken place since 1949. Prior to that i.e. between 1938-1949, the various controls imposed during the war period kept the level of advances at a low level. To be more precise, of the total increase in money supply during 1939-1949, the contribution of trading bank advances was only 22%. The situation in 1949 was from several points of view, favourable to increase in advances. Controls were gradually removed, import and export prices, particularly wool prices, were high, demand for many imports was high and bank reserves were also at a high level. With the unfavourable balance of payments in 1952, the situation changed, advances fell following a fall in reserves. The variations in the level of advances were, on the whole, due to the balance of payment position.

The nature of controls introduced from time to time deserve our attention here. The Reserve Bank relied on the policy of selective methods of credit control in which it attained some success. However, it should be remembered that in the post-war years there was a genuine lack or demand for advances which rose after October 1950 onwards. With minor declines this rise continued and it was after April 1952, that restrictive lending policy, reduction of stocks by importers and the system of exchange allocation (April 1952) brought down the level of advances. The Reserve Bank also resorted to variations in the minimum reserve ratio ; particularly these were raised to 25 per cent and 12½ per cent in May 1954.[16] In New Zealand the full impact of the measure is felt only when the balance of payments becomes adverse and much of the reserves of the banking system are drained. This point should throw light on the peculiar inelasticity of the credit system which makes it almost immune to credit control measures. It was during the same period, i.e. August 1953 to December 1955, that the Reserve Bank's lending rate was raised by three steps from 3 per cent to 7 per cent. Combined with the impact of the unfavourable balance of payments, this forced many banks to borrow from the Reserve Bank. Here again, the rates on advances and overdrafts were so high that borrowing from the Reserve Bank did not quite come to control advances. The banks began to pursue a restrictive policy only when the level of their cash reserve and overseas funds required them to do so. The firm policy followed by the Reserve Bank during the same

[15] *The Report, Appendix C* and *Section II*, pp. 239-240. There is no specific explanation given in the *Report*, but this seems to be the probable one.

[16] Reserve ratios were raised earlier also but such raising did not affect the wide margin of free cash with the banks. Hence, despite the use of the ratio technique overdrafts and advances rose during 1953.

period happened to be one of the factors in bringing about a fall in advances.

Reference must be made at this stage to the structure of rates of interest and the nature of controls applied to the same. Similar to the post depression developments in many countries Government happened to be the major borrower in the money market. The long term Government borrowing during the war and post-war period, until 1950, was at 3 per cent. The demand for loan money having risen after 1950, interest rates increased generally.[17] Apart from these, the Government has been controlling rates of interest payable by local bodies, saving banks and building and investment societies. Finally, a measure of control over hire purchase transactions was introduced in the 1955 Budget.

4. *Inflation in New Zealand*

The genesis of inflation in New Zealand were similar to those in other countries. By 1938 New Zealand economy had come out of the depression and the Second-world-war had built up strong inflationary pressures in the economy. In the early post-war years these pressures were mobilised and the Korean war and the associated boom in raw material prices brought substantial increase in income and prices in New Zealand. Inflation is described as, "an expansionary condition of the economy in which prices, incomes, public and private expenditure, and bank credit tend to influence one another in an upward direction."[18] In the case of New Zealand, prices realised in the external markets and import prices exercise an important, and at times, even a dominating inflationary (or deflationary) effect. *The Report* examines the various aspects of inflation in terms of wage-cost spiral, increased propensity to import coupled with inability to export and reduced incentives to save.

The discussion of the causes of inflation in New Zealand would invariably engage us and would warrant some discussion here. Factors like rise in overseas prices, increased expenditure by Government, particularly heavy capital expenditure unmatched by adequate amount of voluntary savings, wage and salary increases and increases in Reserve bank and trading bank advances would be accepted by students of monetary and banking theory as different aspects of the inflationary process. But one would hesitate to accept 'Comparatively rapid population increase in the post-war years', and 'increased Government expenditure on social services and the philosophies and policies commonly associated with the welfare state', as causes of inflation. It

[17] These include rates on Government loans, mortgage rates, and rates on trading bank' overdraft.

[18] *The Report*, p. 63.

has been the peculiarity of the post-War period in many countries that conditions of full or near-full employment have exposed the economy to constant fears of inflation. Increased Government expenditure more commonly known by phrases like " Contra-cyclical public investment " or " autonomous investments " in the thirties—has presently been associated with the political philosophy of the Welfare State. The significance of this expenditure is no longer contra-cyclical today and yet such expenditure is an important fiscal measure in the hands of Governments to raise and maintain employment level. On going through these causes carefully it appears that two factors were largely responsible for continued inflationary pressures in New Zealand. One was the level of external prices for New Zealand exports and other " the high and increasing levels of private and to a lesser extent, Government ' Capital investment programmes.' "[19] Private capital investment formed 7 per cent of gross national income (excluding increases in trading stocks), in 1937-38, while in 1954-55 this percentage had risen to 14.3. The corresponding percentage of Government investment was 8 in 1937-38 and 9 in 1954-55. Of the high level of capital formation on private account the building trade occupied a predominant position. Building booms have been among the important causes of business cycles in the past. (In the U.K. for instance, there have been building booms at the end of every twenty year period).

The discussion of causes of inflation warrants one comment. Wages and salary increases are described as causes of inflation earlier in the section while in the later part of the same these are rightly recognized as, " the result of other and more fundamental inflationary forces ..... "[20] Higher and higher wages, in some case, actual wages paid being higher than the wage rates fixed by Government awards, has been an important factor in intensifying inflationary pressures. The position regarding wage rates is related with the question of trading bank advances, the level of employment and the economic objectives of a welfare state. If advances of trading banks are controlled, industry may not be able to pay the wage rates recommended by the Court of Arbitration and unemployment may result in some sectors. Discussing the peculiar situation Simkin observes, " Here is a real dilemma, politically dangerous and not unrelated to the Bank's duty of giving effect to Government policy.[21]

5. *The Welfare State in Action*

The beginnings of the Welfare State, in general terms, can be said to have taken place in New Zealand in the thirties. The first legislation to serve this ideal was the Social Security Act of 1938, where-

[19] *The Report*, p. 67.

[20] *The Report*, pp. 66 and 72.

[21] Simkin *loc cit.*, pp. 347-351.

after in the post-war years economic policy of the New Zealand Government has pursued this ideal. The various responsibilities implied in this, " involve the Government in a much more deliberate and comprehensive management of the national economy than was contemplated, or possible, under the more limited powers of democratic governments of the past. It is difficult to decide exactly where the Welfare State (as such) begins or ends, and it is, therefore, also difficult to isolate its effects on the economy and distinguish them from effects arising from other causes."[22] And yet many of the witnesses think that the Welfare State was the root cause of many of the troubles.[23] A balanced view of the picture is offered by the *Commission* when they view the gross expenditure on social services against the background of the national income behaviour i.e. whether it is rising stationary or falling, with increasing amount of capital expenditure, both Government and private, and measures to redistribute income and thereby stimulate private expenditure on consumer goods of certain selections. The *Commission* points to the dangers of inflation once again. The particular section reveals to us not only the conflict of objectives inevitable in the working of a Welfare State but also the kind of opposition to the same among some of the witnesses.

6. *Significance of Central Bank Policies*

The aim of the Commission was to review the working of the monetary and credit system of New Zealand. In doing this they were required to study the system against the background of continued inflationary pressures. From this long run point of view of the Reserve Bank, however, what was more important was not ' inflation ' or ' deflation ' as such, but instability arising out of any economic situation and the measures to counteract the same. With reference to New Zealand's economy some of the causes of economic instability—particularly those arising out of fluctuations in her overseas trade—are largely outside her control. Monetary and banking policy will have to engage its resources to minimise the effects of such fluctuations, at any rate. " they should certainly not aggravate these—instabilities." It is surprising that the criticism of the monetary and credit policies of the Reserve Bank runs in two contradictory strands, that the Reserve Bank failed to provide sufficient purchasing power to people and this kept down their standards of living, and that it (the Reserve Bank) failed to provide the community with money having stable purchasing power. The *Commission* however, has accepted the latter criticism and have looked into how the instability arising out of such a situation could be counteracted. On examination, the *Commission* have stated that the

[22] *The Report*, p. 80.

[23] See " The restrictions of bank advances, restrictions of capital issues—all those sorts of things—are dealing with Symptoms." *The Report* p. 81. Evidence of Mr. P. L. Porter : Chairman , Capital Issues Committee.

[24] *The Report*, p. 89.

Reserve Bank failed to use the weapons of reserve ratio with sufficient promptness when the other controls were being relaxed. The Reserve Bank relied on (a) voluntary co-operation from the trading banks and (b) the theory that leaving the banks with only a narrow margin of free cash would induce them to restrict lending. In this the Reserve Bank was mistaken. Between the announcement and the actual raising of the reserve ratios—the period between December 1951 and August 1952—trading banks advances had risen so high that the banks themselves thought it wise not to raise them further.[25] The monetary authorities were slow to appreciate the need for restraining bank advances and they resorted to selective methods of credit control. The operation of selective credit control has, in many countries as in New Zealand, raised several difficulties. The important consideration in almost all the countries was to use these controls as a part and parcel of a restrictive credit and monetary policy. In New Zealand particularly the real problem was a very high level of advances in an absolute sense so that selective controls by themselves alone could not bring them down. Going through the experience of central banking in New Zealand, as revealed in the various evidences and answers to questions, it appears that two factors seem to be predominant in the situation. In the first place, what may be described as purely monetary and banking measures had been out of use during the whole of the War and immediate post-War years. The resort to these measures was not matter of any routine, rather, it was a matter of rediscovering them. In this rediscovery, it appears, that the Reserve Bank has not been able to select the right moment for their use. For instance, reserve ratios were raised at a time when they appeared superfluous as a measure. The banking system was already lowering advances and secondly, due to a favourable balance of payment the reserves with the banking system were rising. In the second place, it was realised that control of inflationary pressures was not a function of banking and credit policies alone. Suitable policies to combat inflationary pressures were required in the sphere of public finance (including housing finance) interest rates and capital issues.[26] The Reserve Bank on its part did raise the rate of interest to a level, as high as 7 per cent in October 1955 with a view to keeping the banks "in the red." In assessing the full significance of the high rate of interest, in terms of its effects on the borrowing from the Reserve Bank, one institutional peculiarity of the banking system should not be overlooked. The Bank of New Zealand, which handles the business of the Government outside Wellington, requires to borrow from the Reserve Bank continu-

[25] The extracts from the replies given by the Governor of the Reserve Bank and the Secretary of the Treasury show that between the Bank and the Treasury they could not decide upon the policy at the appropriate time. *The Report* pp. 92-93.

[26] *The Report*, p. 99.

ously.[27] Certain of these amounts are borrowed by this bank interest-free. This fact should have been properly explained and published so that the statistics may be understood with the necessary qualifications. Perhaps the weakest point in this policy of keeping the banks " in the red " happens to be the relative absence of any categorical statement of objectives. In this connection one question of a general nature arises. Borrowing from the central bank has been traditionally regarded as undesirable, something which reflects adversely on the soundness of the bank which borrows. In the extreme, it would be as a " necessary evil." It would appear that this traditional view has a great deal to contribute to the success, or otherwise, of a policy of raising the rate of interest to a penal level. From the experience of New Zealand in this sphere it becomes clear that " the trading banks do not necessarily find indebtedness to the Reserve Bank, *even at high rate of interest* so undesirable as to induce them to avoid such indebtedness by changing their policies."[28] This particular tendency was partially strengthened by the continuous borrowings by the Bank of New Zealand from the Reserve Bank. This bank maintained a high level of overseas assets (some of it could have been sold to the Reserve Bank according to the *Report*) and was increasing its indebtedness to the Reserve Bank. In such a situation a clear, and if need be, more categorical and forthright statement of objectives of policy would have helped both the banking system and the Reserve Bank. On the other hand, the budgetary policies of the Government of New Zealand do not seem to fit into this overall picture of anti-inflationary monetary and credit policy. Tax concessions announced from time to time defeated the purpose of the anti-inflationary credit policy. The need was for a greater degree of co-ordination between various policy measures.

7. *Suggestions for Reforms*

A report like this would naturally include various suggestions for reforming the monetary and banking system, in the light of past experience. One such suggestion refers to the problem of social credit. The representation, in this case, was made by the New Zealand Social Credit Association. The question, according to the Association was of a *chronic gap* between the amount of purchasing power in the hands of the public and the high price which sellers must charge in order to earn a fair return. It was a problem, in other words, of a chronic shortage of purchasing power. The chief cause of this gap was the fact that the banking system had the monopoly of creation and destruction of money. When banks give loans to producers money comes into existence. These loans are interest-bearing. For the purpose of

[27] This institutional peculiarity of the New Zealand money market would not be unfamiliar to us in India where the position of theImperial Bank before its nationalisation was somewhat similar.

[28] *The Report* footnote to page 96. My italics.

paying this interest no fresh money is created and hence the members of the community can meet them only by impoverishing one another or by going more deeply into debt to the banks. Since persons and business firms are likely to save a part of their incomes the situation is aggravated. This fact, according to them, was at the back of depression in New Zealand. If the Community had escaped from that at some time, it was because of heavy public debts to finance capital projects. As one of the protogonists observed the growth of public debt ... between 1933 and 1953 "measures the extent to which depression is kept at bay by the State or local bodies undertaking capital projects financed on debt money."

If the main defect of the existing arrangement lay in the *gap* the remedy was to bridge the same after knowing fully its extent. The remedy lay in providing "*debt-free*" purchasing power to balance production and consumption. On examination however the *Commission* found that the Social Credit view was defective and lacked perspective. For example, it was true that public debt had increased but had not the national income increased since the thirties? Again, should we not look into the composition of the public debt as between, held within the country and overseas? The growth of private indebtedness, which is an important point in the Social Credit argument, is largely a transfer of purchasing power from one group of people to another. Particularly, in the recent years, the rapid growth of private indebtedness and borrowing was largely a reflection of rapid social and industrial development. In short, borrowing and debt have increased along with opportunities to save and invest. The witness again showed ignorance of the basic facts about creation of money when they suggested that all new money comes into existence as an interest bearing debt to the trading banks. In New Zealand particularly, when overseas receipts exceeded overseas payments, as they did between 1939 and 1954, banks bought more foreign exchange than they sold, and the volume of money correspondingly increased—without debt or interest. Further, even if interest had to be paid to the banks, this did not cause a shortage of purchasing power. The Social Credit witnesses show a poor grasp of the process of income-generation as a whole and hence they argue that money hoarded is withdrawn from the spending and earning stream. If one looks into the argument historically one is bound to realise that the Social Credit view was developed during the depression of the thirties and all the arguments about the "*gap*", money being hoarded and stocks remaining unsold fit in beautifully into that picture. Against the background of the post-war inflationary pressures the same arguments, and the policy recommendation arising from them, do not appear to be sound and convincing.

Another important submission for reform was on the subject of inflation in New Zealand. Mr. Kelliner, the chief protogonist, pleaded

for "a new concept in banking technique which will enable the banks to lend and invest without creating or destroying the nation's money supply," which he calls, *Loanable Funds*. The new technique would work on the basis of two "accounts" called the *Bank Demand Deposits* and *Loanable Funds*.[29] When a bank increased its loans the former amount would be debited and a corresponding credit would be made in the latter amount—thus decreasing the credit balance in the Bank Demand Deposit Account and decreasing the debit balance in the Lonable Funds Account. The reverse process would take place when a customer repays the advance to his bank. The whole scheme was suggested with a view to showing that expansion or contraction of bank lending and investment would not cause any change in the money supply. But this supposed virtue of the scheme rested on a confusing definition of money supply which includes fixed deposits as a part of Bank Demand Deposits and therefore is available for spending. In point of fact, such a transfer from free to fixed deposits cannot be treated as money supply available for spending. "It merely represents the maximum permissible limit ... to increases in bank lending."[30]

Another claim of Mr. Kelliner was that the Loanable Funds scheme would prevent the trading banks from destroying the nation's money supply in a recession. According to him when the amount of bank overdraft etc. would be falling during a recession this would result in an increase of a corresponding amount in the Bank Demand Deposit Account. But it is not difficult to refute this claim because the increase merely represents authority to lend which the bank is unable to exercise because demand for loans is declining. On the whole therefore, the *Commission* are of the view that the scheme would not make any fundamental change in the nature of trading-bank transactions, neither would it alter the inflationary or deflationary effect of an expansion or a contraction of bank lending.

8. *Emerging Pattern of Central Banking*

The Report contains examination of several aspects and problems of the New Zealand economy. We shall end this with some reflections on the emerging pattern of central banking in general from the monetary experience of New Zealand.

Central banking has been well-defined by Sayers as an art of discretionary control. This control need not develop along traditional lines, depending upon only the conventional methods of controlling and regulating the money and banking system. Rather, it requires essentially the quality of being versatile on the part of the monetary

[29] The Bank Demand Deposits is the repository for New Zealand's money while the Lonable Fund account stands for the amount of New Zealand money available for lending and investment.

[30] *The Report*—p. 128.

authority. Hence, the various weapons of control will have to be constantly tested and re-tested in relation to the monetary situation. During the war and post-war years such experience has added substantially to the nature and concept of central banking. While broad generalizations can be afforded in this subject the peculiarities of the experience of individual countries should be given its proper place. In the case of New Zealand also the weapons of monetary control were subjected to serious re-examination. Some of the points that emerge from this attempt are discussed below.

Registration :

In New Zealand the system of minimum reserve ratios came in for much criticism. How and when were the reserve ratios to be used as a weapon of credit control ? Again, were they sufficient if used alone ? When one goes through the details of these arguments one is bound to discover an unconscious impression that the set of actions and reactions to an initial policy in the sphere of banking are largely automatic. Hence, the monetary authority had the responsibility of only initiating a change. This impression is largely the outcome of a certain period in the development of monetary and banking practice which does not find its parallel today. *The Report* reiterates the belief and tries to search for financial deterrents and/or incentives which would either automatically paralyse the banks or force them to co-operate with the central bank. It is suggested that a much more inclusive concept of reserves—minimum balance—should be evolved which would include besides demand and time deposits, banks' cash, and that the minimum cash be related to advance, discount and securities. Nevertheless, the need for having specific deterrents and incentives remains. If the traditional methods do not meet the situation why not permit the Reserve Bank to charge the banks interest directly on any credit extended in excess of a level previously determined ?[31]

In the matter of overdraft rates too, we find the relative ineffectives of overdraft rates alone to check the situation and the need for a firm policy of controlling advances. One fact that should be fully appreciated in this situation is the general inflationary trend in the economy. The efficacy or otherwise of the various methods of credit control had to be judged against this general background. In an inflationary situation the character of monetary investment and expenditure tends to change and as the *Report* rightly points out, "... these are inherent limitations in any policy of selective advance control in that the banks cannot police the use of the advances..."

On the rate of interest as an instrument of monetary control the policies of the post-war years are extremely informative. In New

[31] While the suggestion is new and has potentialities of being successful we hear the echo of orthodox resentment in..."This suggestion departs more radically from accepted central banking practice than the other... " *The Report* 134.

Zealand too the rate of interest happened to be a problem around which some controversy had arisen. The main point was the effect of a relatively high rate of interest on the general pattern of investment and expenditure during an inflationary period as against its effect on savings. Personal savings, it was pointed out by the Treasury tended to be interest elastic only when the change in the level of the rate was very substantial. The Reserve Bank was, on the other hand, concerned with the questions related to the false property values, private expenditure and the inconvenience in realising assets before maturity due to capital loss. One general comment may be offered at this stage. The structure of interest rates, as a whole in many countries, is fairly top-heavy, being dominated by Government securities, and even when it shows flexibility of late, it is in general less liable as an instrument. In India, too often a point is made to raise the rate of interest in order to raise savings. In this too, two important points are to be properly explained. Firstly, how far are savings interest-elastic and how big should the rise in the rate of interest be to reach elastic range of the savings ? Secondly, in the short period, it is the rate of rise in prices which is a determining factor whether or not funds will be borrowed at even a high rate of interest for investment. In this sphere the experience in New Zealand supports this point. Particularly, in conditions of near full employment a rise in the rate of interest may well tend to push up prices rather than reduce them. On the whole therefore, the *Report* recognized the importance of the rates of interest policy as one *aspect of anti-inflationary policy* having, in some situations, significant marginal effects.

New Zealand money market is relatively under-developed, there being no short-term money-market. The Reserve Bank recommended a market for three months (and possibly six-months) Treasury bills, with limited participation by trading banks. Another important lacuna in the money market was relative absence of financial institutions to provide medium and long-term capital for the smaller industrial and commercial units. The Reserve Bank, however, did not favour an immediate establishment of an Industrial Finance Corporation though the suggestion was accepted in principle. It should be noted that in absence of such a corporation industrial units had begun to utilise bank overdraft for long-term capital requirements.

Central Bank action in New Zealand, however cannot always guarantee economic stability because of her export trade. In this context the crucial issues relate to the size of the foreign exchange reserves with reference to level of imports, level of exports and the terms of trade. While New Zealand exports are important from the point of view of national income generation she is heavily dependent upon imports like raw materials fuels, lubricants and equipment to maintain her labour force fully employed. Hence the need for adequate reserves of foreign exchange. It was suggested therefore

that the exchange reserves of the banking system must be maintained in a period of prosperity at a level equivalent to at least six month's overseas payments. Some witnesses also discussed the ways and means of increasing quality and quantity of exports and maintaining a reasonable level of imports through some controls. However, the external prices of exports remain an important factor in the situation and surpluses and deficits are bound to occur. Prof. Colin Clark, who happened to be in New Zealand at the time, submitted his views on free and flexible exchange rates as a means of controlling balance of payments fluctuations[32] Colin Clark also suggested the need for a forward market in foreign currencies where traders could buy and sell upto twelve months or more in future. This suggestion was not acceptable to the Reserve Bank primarily on the grounds, firstly that there was no market mechanism of the sort that existed in London and New York and secondly day to day transactions in New Zealand, with reference to foreign exchanges, are so erratic that it would be difficult to find a basis for fixing rates. To add to these were seasonal variations in receipts and payments. Realizing the peculiarities of the New Zealand economy Colin Clark himself observed ". . Everything turns on the method of adjustment of wages and other costs. . . New Zealand therefore can only consider policy on the matter of exchange rates in conjunction with wage policy."[33] Apart from this suggestion the *Report* contains important discussion on methods of protecting the New Zealand economy against, fluctuations overseas—the main emphasis being on monetary and fiscal policies and schemes of retaining proceeds from foreign earnings. The overall aim of all policies, put together, is to ensure a level of spending which would not introduce instabilities in the economy. In the fulfilment of this aim maintenance of adequate reserves of foreign exchange would occupy a strategic position. Armed with all the various policy measures and instruments the Central Bank of New Zealand would be required constantly, to watch the fluctuations in the world prices of New Zealand exports.

The Central Banks of our times look quite different from the old models which, by Bagehot, pictured during the last century. Central Banking has advanced in many directions since then. Its main emphasis is now on analysis and devising ways and means of maintaining stability. There are no automatic rules to which it can gear itself. The readers of this *Report* are bound to get this impression. The Report contains valuable information on the economic situation in New Zealand and voluminous statistical material useful for research workers. It is an important addition to the literature on monetary and Central Bank policy.

Ahmedabad HRISHIKESH N. PATHAK

[32] *The Report*, pp. 169-171.

[33] *The Report*, p. 171.

TABLE I

Index Numbers of Imports and Export Prices and Terms of Trade*

(Base 1954 = 100)

Calendar Year	*Import Prices*	*Export Prices*	*Terms of Trade*
1935	35	25	73
1940	43	36	83
1945	62	44	71
1950	84	92	110
1954	100	100	100

* *The Report* p. 33.

TABLE II

Volume of Money in New Zealand, together with unexercised overdraft authorities, 1935 to 1955

(£ mill.)

(Last balance day in June)

	1935	1939	1943	1945	1949	1951	1952	1954	1955
Coin in circulation ...	0.9	1.4	2.3	2.7	3.2	3.6	3.8	4.1	4.3
Notes held by public	6.1	11.5	27.5	34.5	42.3	48.4	50.1	57.1	59.0
Demand Deposits at:									
Reserve Bank ...	13.3	2.5	23.7	15.3	8.1	13.5	12.1	10.5	15.1
Trading Banks ...	25.9	37.3	79.0	96.3	153.6	211.9	192.2	240.6	238.6
Total (Reserve Bank definition)	46.2	57.7	132.5	149.4	207.2	277.4	258.0	312.3	317.0
Unexercised overdraft authorities ...	N.A.	24.0	36.2	38.8	58.7	76.4	68.8	111.7	100.1
Total (including unexercised overdraft authorities) ...	N.A.	76.7	168.7	188.2	265.9	353.8	326.8	424.0	417.1

The Report, p. 45.

NATIONALISATION OF BROADCASTING IN INDIA*

BROADCASTING service was for some time under private aegis in India and it passed on to the Government orbit under some peculiar conditions. In this paper it is proposed to set out a brief account of the growth of the service in India and the reasons that led to its nationalisation.

Broadcasting service originally came into existence in India through the efforts of private enterprise, though it eventually passed into the hands of the Government under some special conditions. The success of the experiments in establishing broadcasting service in the U.S.A. and Great Britain roused great enthusiasm in India and a small beginning was made by the formation of the Madras Presidency Radio Club on May 16, 1924. It began to broadcast two and a half months later. This was followed by the formation of two more Radio Clubs at Bombay and Calcutta with the object of providing broadcasting service to the listeners. The Government's attitude towards these Clubs may be summed up in the words of the National Planning Committee as follows: "To encourage the enterprise without incurring too much liability of financial burden upon the public purse, Government adopted the device of giving financial subsidies to those Clubs, based upon the revenue they derived from the licence fees from receiving sets."[1] Therefore, the Government's encouragement to the broadcasting service was very limited in its initial days and did not give positive and substantial inducement to the Radio Clubs to expand their operations.

These Radio Clubs operated on very low-powered transmitters with a range of about five miles and hence their utility was not of considerable magnitude. But, however, with the birth of the Indian Broadcasting Company Limited (I.B.C.) in 1927 the idea of a regular and organised broadcasting service materialised. The I.B.C. was started by private enterprise, with an authorised capital of Rs. 15/- lakhs and a paid-up capital of Rs. 6 lakhs. The Government gave a licence to the I.B.C. for the construction of two stations at Bombay and Calcutta, which were accordingly inaugurated on July 23 and August 26, 1927 respectively. The annual revenue of the I.B.C. consisted of 80% of the licence fee charged by the Government of India at Rs. 10/- per annum per licence and a 'tribute' of 10% of the invoice price of imported wireless sets and accessories which had to be collected by the I.B.C. itself from the radio dealers.

*The views contained in this paper are expressed in the personal capacity of the Author and do not in any way reflect those of the State Government of Bombay.

[1] N.P.C. *Report on Communications* (1948), p. 130.

The I.B.C. encountered many difficulties, namely evasion of payment of licence fees and inability to collect 'tribute' due to piracy etc., in collecting its revenues and the annual receipts were not sufficient to meet its working expenses which ran to Rs. 33,000/- a month on average. The I.B.C. had spent about Rs. 4.5 lakhs of its capital on the construction and installation of the Bombay and Calcutta stations, leaving only Rs. 1.5 lakhs as capital reserve. The annual deficits exhausted the capital reserve and in order to maintain the service, the I.B.C. took a loan of Rs. 3 lakhs from the Indian Radio Telegraph Company mortgaging its capital assets. It approached the Government in January 1930 for direct monetary assistance to overcome its financial difficulties. The Government rejected the request; and unable to find any other source for improving its financial position, the I.B.C. went into liquidation with effect from March 1, 1930.

Mr. Lionel Fielden, the first Controller of Broadcasting, in his lucid Report on the Progress of Broadcasting in India (Published in 1940) attributed the failure of the I.B.C. to four main reasons. Firstly, the I.B.C. was under-capitalised. Secondly, the very high prices of the radio sets about Rs. 500/- for a four-valve set—were a formidable deterrent in the way of expanding the sale of radio sets (This automatically resulted in low income for the I.B.C. from licence fees and 'tribute'). Thirdly, Indian conditions and traditions were not so conducive to the rapid growth of broadcasting as those of the Western countries. "In the West broadcasting was a convenient channel for an already established tradition of concerts, theatres, lectures and news; whereas in India public interest in all these activities was apathetic and severely limited."[2] And fourthly, there was undoubtedly a great difficulty in collecting the licence fees and the 'tribute.'

The liquidation of the I.B.C. was followed by "a universal demand for Government action in the matter. Not only were existing and prospective receiver licence holders anxious that there should be no interruption in the service, but dealers in wireless equipment throughout India, who held stocks of apparatus to the value of many lakhs of rupees, had been representing strongly to Government the injury that would be inflicted on their trade if immediate action were not taken. The Hon'ble Member in charge of the Department of Industries and Labour had recently been advised on the subject by the leaders or deputy leaders of the principal political parties in the Assembly who urged that immediate steps be taken to ensure that the service should be carried on without interruption, Government if necessary themselves taking over and continuing the service."[3]

[2] Lionel Fielden, *Report on the Progress of Broadcasting in India* (1940), p. 3. He stated that this did not apply to Bombay and Calcutta.

[3] Proceedings of the Standing Finance Committee dated February 27, 1930, quoted by Fielden on page 3 of his *Report*.

The Government took over the assets of the I.B.C. for Rs. 3 lakhs (depreciated value of the assets) and began operating the Bombay and Calcutta stations from April 1, 1930 under the name of the Indian State Broadcasting Service (I.S.B.S.) attached to the Department of Industries and Labour, with the aid of a Central Broadcasting Advisory Committee formed for the purpose of advising the Government on matters of management and development of broadcasting in India. However, in the first instance, the Government's operation of broadcasting was to be experimental for two years, at an estimated deficit of Rs. 1,41,000/- per annum.

Two important events occurred during this period. One was the winding up of the Madras Presidency Radio Club in October 1927, after nearly three and a half years of existence due to financial difficulties. The transmitter of the wound-up Club was presented to the Madras Corporation which obtained a licence from the Government and started regular broadcasting service from April 1, 1930. This date incidentally coincided with the inauguration of State enterprise in broadcasting in India. The other important event was the establishment of a small transmitting station at Lahore by the Y.M.C.A. in 1928.

Thus, when the Government began broadcasting in 1930 in Bombay and Calcutta under its aegis, two more transmitters were working one at Lahore and the other at Madras, outside the orbit of the State enterprise.

Even though the Government reduced its expenditure on the working of the broadcasting service to Rs. 22,000/- a month[4] it incurred losses in the beginning. Owing to the immediate needs of effecting economy in Government expenditure during depression, the Government decided in October 1931 to close down the I.S.B.S. But the Legislators, the press and the public brought pressure on the Government to maintain the service and consequently in November 1931 the Government agreed to carry on the I.S.B.S. for an interim period "during which proposals for its maintenance by private enterprise might be formulated and examined."[5] But no private enterprise came forward with plans for taking over the service from the Government which had, therefore, to decide on running the I.S.B.S. under State ownership and management in May 1932.

And now the Government had to arrest the continuance of losses to I.S.B.S.; so it devised two measures. The first was the enhancement of the customs duty from 25% to 50% on the import of wireless goods. The second was the Indian Wireless Telegraphy Act of

[4] The I.B.C's monthly expenditure was Rs. 33,000/- in 1927 which was reduced to Rs, 24,000/- in 1929 due to its financial difficulties.

[5] Fielden, *Report on the Progress of Broadcasting in India*, p. 4.

1933, with the object of preventing the evasion of payment of licence fees on wireless reception sets. Both these steps had a salutary effect on the financial position of the I.S.B.S. The following table of income and expenditure of the broadcasting service illustrates this point.

TABLE I

Year	*Income* Rs.	*Expenditure* Rs.	*Profit or loss* Rs.
1930-31	1,72,502	3,37,672	— 1,65,170
1931-32	2,12,724	2,23,483	— 1,10,750
1932-33	3,85,731	2,97,332	+ 88,339
1933-34	5,70,076	3,44,906	+ 2,25,170
1934-35	9,81,096	4,39,794	+ 5,41,302
1935-36	13,90,654	6,66,256	+ 7,24,398
1936-37	18,46,518	11,89,254	+ 6,57,264
1937-38	22,15,694	16,32,816	+ 5,82,878
1938-39	22,69,803	25,13,335	— 2,43,532
Total	1,00,44,798	77,44,848	+ 22,99,950

Source:- 'Income and Expenditure of A. I. R.' by Pratinidhi, *Radio Services*, October 1954, p.30.

This Table reveals that from 1932-33, there was a spectacular rise in the income on the service. Besides the two measures mentioned above, the commencement of the Empire Service in December 1932 by the B.B.C. was of far reaching importance in this context. It induced the European community in India to possess radio sets. This increased the imports of such equipment and augmented the Government's revenue through increased customs duties and licence fees.

The Table further indicates that the rate of increase in expenditure was lower than that in the income, resulting in a large margin to the Government from 1932-33 to 1937-38. Till 1934, the Government had not undertaken any plans for the expansion of the broadcasting service due to financial considerations, and for the first time it sanctioned in 1934 about Rs. 2½ lakhs for the construction of a Radio station at Delhi which went on air on January 1, 1936. In 1935 the Government allotted Rs. 20 lakhs for the development of broadcasting and thus till 1940 the expansion programme was carried out vigorously, bringing the total number of broadcasting stations of the Government to nine. In 1936 the name of the I.S.B.S. was changed to All India Radio (A.I.R.). From 1940 the development activities were practically in abeyance due to the outbreak of war, except for the expansion of the Delhi station in 1944 and in 1945 by the installation of additional transmitters for the purpose of counteracting enemy propaganda. Again, from November 1947 (i.e., since Independence) there has been a rapid increase in the number of broadcasting stations and the first Five Year Plan which provided for a capital expenditure of Rs. 4.94 crores for the development of broadcasting, accelerated the pace of expansion of the broadcasting network.

This is a brief historical analysis of the Government's part in the development of broadcasting in India. There are some interesting features in this field marking the growth of broadcasting service under provincial government, local authority and private enterprise during the period 1935-38. In 1935 the Marconi Company loaned to the Government of North-West Frontier Province a transmitter (which was installed at Peshawar) and some community receiver sets on the understanding that they would be purchased after a year. The Government of India took over the Peshawar station in April 1937 on the request of the Government of the N.W.F.P. In April 1936, the Dehra Dun Broadcasting Association—a private organisation formed to broadcast rural programmes—obtaining a licence from the Government of India, began broadcasts from its transmitter installed at Dehra Dun. But for want of funds this station was closed down in May 1938, after two years of existence.

Mention has already been made of the Madras Corporation Broadcasting station (which began operations in April 1930) and the Y.M.C.A. Broadcasting station at Lahore (which commenced its service in 1928). The former ceased to function from June 16, 1938 as the Madras station of the A.I.R. was opened on that day. The Lahore station, from the very beginning, got financial assistance from the Punjab Taxt-book Committee and the Punjab Government to meet its operating costs. It approached the Government of India in 1936 for financial aid to renovate the station and maintain the service till the A.I.R. opened a station there. Despite the help rendered by the Government of India and the provincial Government of Punjab, the station ceased to function from September 1, 1937; and in December 1937, the Lahore station of the A.I.R. went on air.

These features of the broadcasting service indicate that till June 1938 the Government of India was far from being the only operator of the broadcasting service and that there were others too in the field, whether provincial or local authorities or private organisations, operating with the permission of the Government under licences, though the A.I.R. is today a State enterprise without competitors, i.e., a public monopoly.

In the light of the above survey let us draw certain observations having a bearing on the way in which the idea of nationalisation materialised in the field of broadcasting in India.

(i) *Nationalisation of broadcasting due to the failure of private enterprise* : The failure of the I.B.C. was responsible for the advent of State enterprise in this field. The Government did not take over the I.B.C. promptly, on its decision to liquidate itself; nor did it give any positive help to the I.B.C. which would have obviated its liquidation. Even when the I.B.C. complained of its difficulties in

collecting its revenue—e.g., 'tribute,' due to piracy etc., the Government did not set them right. During the life period of the I.B.C., the Government was a silent spectator and the assistance was highly restrictive. Thus, it may be observed that the Government's attitude towards this public utility service was one of disinterestedness. No wonder if the I.B.C. had failed under these conditions; and a part of the blame should be placed on the Government itself.

When the I.B.C. decided to close down in 1930, the Government did not at once come forward to take over the service on grounds of its public utility character. Such a course of action had to be repeatedly demanded by the legislators, radio dealers and the licence holders. The Government finally acceded to their request and took over the Bombay and Calcutta stations in 1930. Thus, apart from the failure of private enterprise, public pressure was the driving force behind the State enteprise. If only some private body offered to operate the service, the Govrnment would have gladly allowed it to do so. This is evident from the rather hesitant attitude of the State just before taking over the assets of the I.B.C., and its indifference towards the expansion of the service in the first four years of nationalisation. Thus, broadcasting became a State enterprise, not on any ideological policies of the Government, but by the sheer force of practical needs resulting from the failure of private enterprise.

(ii) *Early interest of the Government in broadcasting financial in nature:* The early interest of the Government in the nationalised broadcasting was of a financial nature, and was not based on the service motive. The financial success of broadcasting proved necessary before the Government was interested in the service.

This is evident from the fact that till 1934 the Government had not spent any money on expanding the broadcasting network. Further, the expenditure on the then existing two stations also was under check. The increase in the customs duty and the prevention of evasion from the payment of licence fees, resulted in good revenues from 1932-33. Thus, the first and foremost step that the Government took was to improve the financial position of the service, rather than the service aspect of it.

When the earning potentiality of the service was proved, the Government launched on development programmes. One of the intentions in doing so was to earn more revenue. Sir Frank Noyce admitted in the Assembly in 1935: "Broadcasting has been a valuable source of revenue and ..... we are really overcharging the consumer", making him pay twice in the shape of licence fees and customs duty. He went on to say that: "In spite of the fact that we have done so little—we have done practically nothing since we took over the Broadcasting service except to keep up the two stations in Bombay

and Calcutta—yet, inspite of that, our revenue has gone up. Surely from two points of view, from the point of view of getting still more revenue and from the point of view of giving the consumer proper value for his money, it is high time that we expanded ....."[6] This statement clearly proves that the early policy of the Government of India was guided mainly by financial considerations and that the public utility nature of the service was only secondary. It is relevant to note here that the reverse was the case with Great Britain in this respect. Broadcasting service in Britain was advocated and accepted as a public service from the beginning and the expansion of the service never rested on profit motives; nor was it arrested by the fear of deficits.

That the broadcasting service did not appear as of sufficient public utility nature to the Government may be inferred furher from the contrasting policy adopted by it towards the railways. Railways were developed without reference to any prior proof of financial success. The Government rendered substantial help to the private companies engaged in railway construction through land grants and guarantee of interest on the invested capital, at a time when the earning potentialities of the railways were not at all fully known. Later, when the private companies failed in doing their job economically and efficiently, the State did not hesitate to undertake the construction work itself. Thus, the Government pursued differing policies in the development of broadcasting and railways, though both of them are of public utility character. Two reasons might have influenced this difference. One is the basic and multiplier nature of the railway enterprise, which accelerates the economic activity in various ways directly as well as indirectly; broadcasting is not of such type and its cultural and entertainment values do not have any direct bearing on the economic activity of the country. The Government did not, therefore, give much weight to the consideration of immediate returns while expanding the railway network in the beginning (in fact, the Indian railways did not pay profits till the beginning of the 20th century). The other reason that influenced the Government in developing the railways is their strategic importance; and broadcasting has no such strategic value (except in wartime, for propaganda purposes).

Thus, though both the services, railways and broadcasting, are public utilities in their broad classification, the difference in their economic effects influenced the Government to adopt different policies as regards their early development.

(iii) *No monopoly policy for Indian broadcasting:* State intervention in broadcasting was not occasioned by considerations of policy favouring monopolistic developments in that field in India. Consequently the I.S.B.S. (which later became the A.I.R. in 1936) was

[6] Sir Frank Noyce, Indian Legislature Assembly Debates" Vol. 4 1935, p. 3213.

never clothed with monopoly power. There were no instance, as far as information is available, of any private organisation being refused a licence to broadcast, on the ground of keeping a monopoly in the field. It is more apt to infer that the Government had not formulated any conclusive opinion, for or against, monopoly till 1938, i.e., for a period of 14 years since the inception of the service, and for a period of eight years of State enterprise. Even in 1938 the Government did not decide specifically on monopoly ; for there was no pronouncement of the Government's intentions to this effect, in that year or later. The A.I.R. became a monopoly organisation from 1938 primarily because of two reasons. Firstly, the other broadcasting organisations disappeared completely by that time as they were not successfull (and no evidence appears that the Government coerced them or created conditions for them to wind up their services in the interests of having a single organisation). Secondly, no private organisation came forward to set up broadcasting stations and operate the service in or after 1938. The A.I.R., therefore, became a monopoly without any conflict of ideology. The Government attained the monopoly without choice and not by deliberate decision. It is impossible to answer the question whether any private floatations in the field would or would not have been permitted by the Government after that time, for there was no such attempt, though no law exited against such enterprise.

In passing, at this juncture, we might remark that the National Planning Committee's reference to the Indian Broadcasting Company (not the A.I.R.) as a 'public monopoly.'[7] Is inappropriate and misleading on two grounds. First : The term 'public monopoly' connotes a monopoly in the hands of a public authority but the I.B.C. was only a private company. Second : The I.B.C. itself was not a monopoly organisation during its life time, excepting for a brief period of a few months. It may be recalled that the Madras Radio Club functioned up to October 1927 and the Lahore Y.M.C.A. Club began its operations in 1928.

Our next observation is that the Indian Government's (lack of) policy on the issue of monopoly *vs.* competition is comparable neither to the policy of the U.S.A., nor to that of Great Britain. One of the major concerns of American broadcasting has always been the encouragement of 'healthy competition'[8] and the Federal Communications Commission looks after the licensing and regulating of broadcasting services. Thus, the Government's policy in the U.S.A. is concerned with the encouragement of competition among different broadcasting companies.

[7] *N.P.C. Report on Communications*, p. 131.

[8] Llewellyn White, *The American Radio* (1947) p. 128.

On the other hand, there was considerable opinion and pressure in favour of a monopoly in Great Britain since the inception of broadcasting, and though much diversity obtained on this point during the later periods, the Government accepted the idea of a monopoly organisation from the beginning. Two main arguments that supported the plea for a monopoly were : (i) the technical advantages—facilitation of the introduction of invention in the whole system, simultaneous broadcasting of programmes, and avoidance of interference between stations, and (ii) maintenance of high standards in programmes. These arguments found support from the Post Office, and Mr. (later Lord) Reith, who influenced the British broadcasting policy immensely from the very beginning of the service ; and the public opinion too was largely behind them. This resulted in conferring the monopoly status on the British Broadcasting Company registered as early as in 1922.

Later, the question took the shape of how best to organise the monopoly towards the desired ends. And a public monopoly of the Corporation type was obviously indicated. The Memorandum presented to the Crawford Committee in 1925 by Sir Evelyn Murray, Secretary of the Post Office, wanted the setting up of a corporation to run the broadcasting services as the company " would probably not be acceptable as a permanent solution either to Parliament or to the public ", for the management of broadcasting service to remain in the hands of a body representative of radio manufacturers.[9] The Memorandum felt : " Generally speaking it seems desirable that the Corporation should enjoy a large measure of independence and should not be subject either in its general policy or its choice of programmes to the detailed control and supervision of the Postmaster-General, from which would flow the corollary that the Postmaster-General would not be expected to accept responsibility or to defend the proceedings of the Corporation in Parliament.[10] Mr. Reith also favoured a public corporation ; and the Crawford Committee recommended : " We think a public corporation the most appropriate organisation. Such an authority would enjoy freedom and flexibility which a Minister of State could scarcely exercise in arranging for performers and programmes."[11] Thus, to give freedom and flexibility to the organisation, and to free the service from private hands, a public monopoly in the shape of a public corporation, viz., the British Broadcasting Corporation, came into existence in January 1927.

But, there was no evolution of a like nature in India. Not even the Government which took over the broadcasting service in 1930 availed of this favourable experience abroad in formulating its policies as regards the service, and in justifying its own approach. Funda-

[9] R. H. Coase, *British Broadcasting* (1950) p. 57.

[10] *Ibid*, p. 58, quoting from para 27 of the Memorandum.

[11] *Ibid*, quoted on p. 59.

mentally the Government had no earnestness in doing what it did, and whatever was done in the early years of the nationalised broadcasting, was done without any positive interest.

Apart from the other advantages of a monopoly, the case for it in Great Britain rested in no small measure on the grounds of keeping up morals and entertainment standards. Indeed, this was implied in the argument of maintenance of standards. To Prof. Coase this argument contained three strands of thought ; "The first is that the ordinary laws against slander, obscenity and blasphemy are not appropriate to broadcast matter. The second is that the demands of some people, althongh not of themselves objectionable or harmful are unworthy of being met. As it was expressed by the reviewer of Mr. Reith's book in *The Times Literary Supplement*, to employ broadcasting for 'the dissemination of the shoddy, the vulgar and the sensational would be blasphemy against human nature. 'The third is that a monopoly is needed in order to raise standards—in this context the standards of taste of the listeners."[12] From this admirable analysis of the argument that prevailed in favour of monopoly, we find that the first two factors are directed to keep up the moral standards of the programmes, and the third, to develop the tastes of the listening public by providing entertainment of high standards—this by itself has its ethical implications. Thus the listeners, their tastes and morals received attention in the arguments for monopoly of broadcasting in Britain. But, this attracted little consideration in India in the development of the broadcasting policy.

(iv) *No controversy on private* vs. *public enterphise* · In fact, whatever discussion there was in India was not on the question of private vs. State enterprise for broadcasting at all. Because private enterprise failed the State had no alternative but to take over the service to save it from total extinction. And curiously the issue of private broadcasting was never raised in the subsequent periods.

The question of private enterprise can never arise any more because it has now become a closed issue. There are no two opinions on this. At the same time, there is the feeling on the part of some that the nationalised broadcasting is under too much of rigorous government control and that it may carry the evils of the party in power. As for the method of remedying this defect the only suggestion offering itself in the present background of the enterprise is the formation of a Corporation such that the interference of, and control by the Government might be the minimum possible. If the same defect had been realised some twenty years ago, the public demand might have taken the shape of a plea for (revitalised) private enterprise. But now there is no going back on the policy.

[12] Coase, pp. 189-190.

Let us now examine to what extent nationalisation in India was meant to give effect to the idea of constant control by the Government on the operation of broadcasting. In other words, was the nationalisation intended to allow the Government to manage the undertaking as a business manager manages a business unit ? This question came up five years after nationalisation had been initiated, probably under the influence of the developments in Britain where the British Broadcasting Corporation was set up. Some legislators demanded the inception of a corporation in India. Mr. Mohanlal Saksena said in the Assembly : "It is with a view to safeguarding the country from this danger" (the reference was to political influence) "that broadcasting in England is not in the hands of Government, but it is being managed by a non-political agency, and no political party can enjoy any preference in its propaganda"[13] The Government was determined to keep the service under its direct influence, and Sir Frank Noyce, Member in charge of Industries, stated that : "Control of stations will continue to remain in the hands of the Government, as in the past, and they will be absolutely free from political influence."[14] With the assurance that the service would be free from political influence, the departmental method of organisation was perpetuated.

The press too favoured a public corporation. *The Statesman* of July 27, 1937 in a summarised article (originally published in *The Times*, London) suggested that the A.I.R. should be converted into a public corporation like the B.B.C. "*The Times* in its leader of the 28th of July advocated the transfer of the control of broadcasting from Government to an independent organisation and this was quoted by the Controller himself with approval in the 'Indian Listener' of the 2nd August, 1937."[15] But this plea did not meet with any success. The demand for transferring control to the Government could not turn into a demand for a private company which would have achieved the freedom from Government control which was the disliked aspect of the State service. Because of the fact that no private enterprise was forthcoming at that time but not because of the realisation that the service ought to be a monopoly, a public monopoly emerged. The choice in England was between a private monopoly (of radio dealers) and a public corporation; whereas in India the choice was between a departmental organisation and a public corporation. Naturally the corporation idea was accepted in England but not in India.

However, we may deduce from the demand for a separate corporation that many did not approve of the exercise of the interfering control by the Government as a corollary of nationalisation. It is interesting to note in a background of this nature that the public (or

[13] Mohanlal Saksena, *Indian Legislative Assembly Debates* Vol. 4. 1935, p. 3207.

[14] Sir Frank Noyce, *Indian Legislative Assembly Debates*, Vol. 4, 1935, p. 3215.

[15] Mr. Asaf Ali, *Indian Legislative Assembly Debates* Vol. 4, 1938, p. 338.

legislators' demand did not boil down, or change into one, for relieving broadcasting from the hands of the State. That shows that the nationalisation was taken as a *fait accompli* and a closed question. And the whole attempt was to remove the most important defect of government management.

The demand for a corporation again came up in 1955[16] when a private bill was moved in Parliament urging the Government to introduce legislation for the setting up of a corporation to control and operate broadcasting. The reasons of the Mover were : "Government has failed to make any progress in making A.I.R. run on efficient lines. Apart from the low standard of programmes, even the artists of A.I.R. enjoy no security of service."[17] He accused the A.I.R. of having failed to follow an impartial policy regarding political parties. But the bill did not commend itself to the Government. Dr. Keskar, Minister for Information and Broadcasting, opposed the demand on two grounds. Firstly, Parliament should have control on broadcasting in the present state when the Government is spending huge sums on the development of broadcasting and when it has plans to spend more in the Second Five Year Plan. And secondly the creation of a corporation would take away Parliament's control over broadcasting. This is, in fact, a corollary of the first argument advanced by the Minister.

This discussion on the private bill in Parliament does not lend any moral on nationalisation *vs.* private enterprise because the denationalising of the A.I.R. has not been the issue of the debate. But it provides us with one unmistakable reason for the policy of nationalisation of broadcasting, namely, that the Goverment wants to control the activities of broadcasting more than it would be possible under a system of private broadcasting as in the U.S.A. and also more than it would be possible under the method of public corporation as in Great Britain.

Bombay J. V. S. RAMASASTRI

[16] Earlier in 1954, the *Eastern Economist* (New Delhi) demand the creation of a corporation for the A.I.R. to allow it more freedom of operation. See the *Eastern Economist*, September 17, 1954, p. 465.

[17] *The Hindu* (Madras) February 27, 1955, quoting the proceedings of the debate in Parliament.

BANK FINANCING OF CONSUMER INSTALMENT CREDIT*

CONSUMER instalment credit has recently evoked enquiry in the conservative banking circles of India. In this connection it is desired in this Paper to examine how far this revolution in banking would come into conflict with the accepted notions of bank liquidity. Secondly, we also discuss the various methods by which bank instalment credit may be advanced, so as to secure the above tenets of liquidity. Section I examines bank liquidity theories in the light of latest developments, while Section II deals with the methods of lending. It is assumed that banks are interested in advancing consumer instalment loans and that this paper is not concerned with the merits or demerits of instalment lending from the angle of economic effects.

Section I

Bank Liquidity Theories

Banking Principle

The earliest principle of bank lending as expounded in theory and practice has been the insistence that banks confine exclusively to short-term financing of a mercantile character. Underlining this principle is the implicit assumption that the *sine qua non* of sound banking is the degree of confidence depositors have in the ability and the capacity of a bank to meet its periodical cash obligations. The extent of this confidence is measured by the amount of liquidity a bank is obliged to maintain at all times, meaning thereby the possibility of raising cash quickly.[1]

This principle of solvency is realised by retaining total bank resources in a self-liquidating form, technically called the Commercial Loan Theory or the Banking Principle. This Theory assumes that banks should confine their activities purely to "trade" credit[2] so that any loan or advance may become self-liquidating in the short period. This is to suggest that bank financing for profit should be such that the transaction will bring money into the hands of the debtor automatically at the end of a brief period say, up to 90 days. So long, therefore, as bank's assets apart from cash, consist of short-term self-liquidating commercial paper, maturity and payment of one batch would provide

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[1] Machlup F. *Liquidity of Short-Term Capital* (Eca 1932) p. 271.

[2] Hansen A. *Monetary Theory and Fiscal Policy* (NY 1949) pp. 45-46.

funds for new loans or keep bank's asset portfolio in a flexible form to meet the variations in deposit withdrawals.

Lending, however, on an instalment basis would disrupt this flow since the time lag in the return of funds prejudices the self-liquidating nature of the loans. "The use of short-term funds for making long-term loans ..... it was thought," declares, B. K. Madan, "was likely to endanger the liquidity of banks".[3]

Shiftability and Marketability Theory

The Commercial Loan Theory in course of time gave way to the Shiftability Theory. Here, the cardinal principle was believed to be that the credit instrument or the collateral supporting a bank loan must be liquid by virtue of its self-liquidating character i.e., both the credit instrument or the collateral must be easily marketable, saleable without any capital depreciation and be effortlessly shiftable to other individuals or institutions in times of distress.

The secret of a bank's success in maintaining its solvency is in meeting the demand for credit without calling upon its borrowers to make payments in order to restore liquidity. In the words of R.I. Robinson, "Banks should so far as possible, follow liquidity balance which will not require them to put pressure on good solvent borrowing customers merely to restore the banks' liquidity."[4]

Since consumer instalment loans violate the above canons of liquidity once again such lending would not be favoured. It would, for example, mean lending on unsecured promissory notes, while the credit instrument would not be easily marketable nor shiftable. Further, banks are not willing to accept chattle or plant mortgages as collateral for the loans of the amount and duration proposed by instalment dealers. This view of consumer credit stems from a parochial interpretation of the term liquidity in theory as distinct from its practical application.

Institutional Development

This brings us to the discussion of a wider view of liquidity which includes the credit risk attached to loans, the organizational development of the financial markets and efficient conduct of business by borrowers. Apart from insisting on the self-financing nature of the transaction a bank maintains adequate margin at all times on the outstanding debt. These precautions, nevertheless, do not ensure its total liquidation because the face amount together with the margin is in con-

[3] Madan B. K. "Banks and Medium Term Credit to Industry" (*RBI Bulletin* 1957) p. 521/528.

[4] Robinson R. I. *The Management of Bank Funds* (NY 1951) p. 40.

sonance with current market prices. The actual liquidating power, therefore, may rest not in the transaction itself but in the borrowers' future operations.[5]

Moreover, in respect of collateral, which do not arise out of sale in the ordinary course of production and marketing, or do not possess a maturity in any way related to the turnover of goods, and represents what is probably from the orthodox point of view speculative credit, modern theorists belive that its liquidity rests upon the organizational development of the financial market and not its self-liquidating character. This improvement in the later thought may be considered to be a modification of the earlier Shiftability Theory.

In so far as collateral under consumer credit is concerned, it conforms to the above characteristic. Generally, it may be a chattel mortgage, a pro-note, a trust receipt, an account receivable, a hypothecation document or any of their combination, in addition to lien over the asset thus financed. Liquidity, therefore, depends upon shifting the collateral created to intermediate financing houses or to the central bank as a lender of last resort.

In addition, it also rests upon the developent of second-hand markets in commodities instalment financed. For example, as soon as a delinquent account appears the asset instalment financed by banks may be attached, reconditioned and resold. Better, a bank may preserve the liquidity of the collateral through a recourse or repurchase agreement with a retail dealer.

Rotation of Portfolio

Liquidity may also be preserved by the prudent management of financial resources. The principle is to create new obligations in proportion to the extent of repayment and increased rate of growth in resources. Thus, instead of each credit instrument providing for its own liquidation one after another, there is a regular inflow and outflow of documents settling one another. In banking usage, this is called 'rotation of portfolio' and assets belonging to it may be considered to be liquid within limits.

Consumer instalment credit is again of this type. As payments are received from borrowers at stipulated intervals, so an instalment lender is regularly placed in funds to repay the bank debt while in addition, an asset remains to be seized and sold in case of default. It may be argued that in case of consumer's commodities as distinct from capital equipment, the asset consists of a store of units of satisfaction and, therefore, cannot be considered to be liquid. But this

[5] Jacoby N. H. and Saulnier R. J. *Term Lending to Business* (N.Y 1942).

assumption is incorrect since the bulk of the consumer goods are durable in character and are capable of yielding repeated dozes of utility. Their value, therefore, is not immediately destroyed in use. However, where the asset financed has no resale value liquidity from the bank's point of view is secured by the credit-worthiness of the borrower or by the solvency of the dealer.

Anticipated Income Theory

Flowing from the analysis expounded in the previous paragraph H.V. Prochnow has extended the thesis termed the "Anticipated Income Theory" as a new liquidity theory.[6] He feels that the traditional theories are inadequate though possessing 'merit.' This inadequacy arises from their obsession in securing liquidity for an individual bank rather than the liquidity of the entire banking system. Viewed in this macro-economic aspect, one must necessarily analyse the implications of the variable of collection and restraint of credit of all banks.

In a depression, for instance, if the liquidation of bank assets was carried out through the sales of the assets of the borrowers as indicated by the traditional orthodox theory, the accentuation of the recessionary forces would become inevitable. On the other hand, should liquidity be sought to be restored by shifting the bank assets to the open-market, it would induce an additional weakness in an already weak market and large capital losses result.

Even assuming that all the banks were selling investments at once and that the general public were willing to absorb the offerings at a price, none of them would in fact gain cash on any scale. The reason is obvious, if all banks are selling at exactly the same pace there would be no redistribution of cash at all. The situation then is identical to the one where each single bank is selling securities to its own customers. As a result the decline in the investment item on the asset side of the balance sheet would be offset by a corresponding decline in deposits on the liabilities side. Marketability, therefore, "is not sufficient in itself to render a banking asset liquid."[7]

Moreover, in a country like India owing to the multiplicity of taxes, such as income-tax, super-tax, estate duty, wealth-tax, gifts-tax and expenditure-tax, the liquidity of the existing assets is dubious. It may be argued that since assets consist largely of gilt-edged rather than property, its market can be considered liquid. This again is not true for India. The Reserve Bank of India, the State Bank of

[6] Prochnow H. V. "Bank Liquidity and the New Doctrine of Anticipated income" (*Journal of Finance*, Dec. 1949) pp. 293/314.

[7] Dacey W. M. *The British Banking Mechanism* pp. 88 (London 1951).

India and the Life Insurance Corporation between them have a complete domination over the bond market with the result that individuals cannot operate in this market without incurring capital losses.

Under the conditions, one has necessarily to agree with Prochnow's hypothesis that "Banker's ordinarily liquidate their loans not by the sale of assets of the borrower as in commercial credit or traditional theory of liquidity, nor by shifting the term loan to some other lender as in the shiftability theory of liquidity, but by the anticipated income of the borrower. As a rule it is anticipated that term loans will be liquidated by the earnings of the borrower—through extension of term loans, they have established in the American Banking System a third major method of bank credit liquidation."[8]

Credit Worthiness

Unfortunately granting advances for consumer instalment credit either directly or indirectly involves partial "anticipated income" considerations. In cases of loans and advances other than for the purposes of consumer's instalment credit, the extent of the loan may be calculated from the borrower's present position and chances of his securing a higher income in the future. But it will be fairly hazardous to depend on *potential* income of consumers.

A more rational attitude suggests "current income" as the criterion for loan advancement. This principle provides a broad framework within which selection may be considered. But in itself it fails to incorporate risk reduction since by its nature consumer instalment lending is made on a "personal" loan basis. Therefore, it calls for rigorous credit investigation to determine the borrower's credit worthiness; for this, the technique of gauging the three C's of character, capacity and capital may be applied.

In conclusion, therefore, it may be summed up that modern economic activity is considerably diversified and banks have been called upon to hold in their portfolio a wide variety of instruments along the lines of a department store. Moreover, the banks today cater to all the credit requirements of an industry right from the building and equipment of the plant to the purchase of raw materials, production of finished goods and their distribution. In this development, the liquidity of a bank merges into the stability and the liquidity of the entire banking system or the industry or industries.[9]

Besides, the degree of liquidity in the bank's assets has to be in proportion to the probability of its need for cash. This calls for

[8] Prochnow H. V. "*Term Loans and Theories of Liquidity* (N. Y. 1948).

[9] Dacey W. M. *op.cit.* p. 88.

a bifurcation of liabilities into demand and time deposits. The higher the proportion of time liabilities in the component of total liabilities the lower must the liquidity provision be for a bank and *vice versa.* This provides elbow-room for loans other than for short periods. Normally the primary reserves usually consisting of cash and immediately available balances with other banks look after the probable daily net cash withdrawals. This is supplemented by a secondary reserve consisting of near-money assets to meet the seasonal variations in demand or national exigencies. The balance of resources, therefore, may be freely utilised in the financing of any socially desirable investment in consequent of the time lag in repayment provided the new investment coincides or is in equilibrium with maturing obligations or increase in resources.

Differing Practices

An examination of the channels and destination of bank credit in practice shows that the orthodox principle of lending namely, the Commercial Loan Principle as well as the Shiftability Theory in its modified form, is honoured more in its breach than in its observance, and that the practice conforms to the wider view of liquidity, namely, anticipated income theory advocated by us. Banks, for example, advance credit to wholesalers and retailers a considerable portion of which is passed on to consumers in the form of charge accounts. The commodities thus financed may on the one hand be immediately used up with the result that credit incidental to the purchase is not truly self-liquidating. On the other hand, bank credit may be employed to construct buildings or purchase a plant in which case it is long-term in character. "A lot of medium-term and even long-term lending by banks masquerades as short-term lending" opines Dr. Madan.[10]

This has inadvertently led the banks to uphold such loans in a depression. "The idea that the short-term loan was necessarily a safe loan and that it could not encourage such inflationary development as would inevitably result in a crash did sometimes close the eyes of bankers to the risks they were running" says R. S. Sayers; "hence the accidental interests of banks in the fixed capital of collapsing industries."[11] The conclusion, therefore, inevitably reached is that directly or indirectly banks have in fact furnished a good deal of credit of a non-self-liquidating kind for purposes other than the short-term. In spite of this banker's antipathy towards consumer instalment financing may be traced to the fear of complex organizational problems and heavy risk.

[10] Madan B. K. *op.cit.* p. 522.

[11] Sayers R. S. *Modern Banking* (Oxford 1951) p. 236

Operational Risk

Instalment credit requires a special investigation and collection procedure. Under direct financing, banks are not in a position to look after the numerous small accounts which require laborious book-keeping, sharp collection supervision, check on losses and prompt re-possession. Under indirect financing the loans being secured on liens, safety necessitates periodical checks to see that the assets are not sold out of trust. Problems of this nature, however, at best may be considered to be administrative and can be satisfactorily solved.

The fear of risk is a function of low income-earners assisted by consumer's instalment credit. This is again a misplaced consideration since empirically instalment credit is found to be safe credit. For Western countries, for example, the delinquency ratio is placed at less than two percent of the total outstanding instalment credit.[12] In spite of this, the hesitation to foster consumer instalment financing in India may be assigned to *inertia*. Historical evidence lends support to this observation. It has been found that intially in all countries banks have been indifferent to instalment lending. But once a rival takes the lead, others are quick to emulate. This happened in the U.S.A. in the 1930's and is over the past two years occurring in U.K. Since we are burdened with the weight of British banking traditions,[13] the promotion of instalment credit there has motivated some initiative in this country too. But its beginning at best may be considered explorative. In view, however, of the refinement of the classical Commercial Loan Theory and Shiftability and Marketability Theory of bank liquidity by the Anticipated Income Theory in modern times, economic doctrine is moving a pace with practice. Considering that "the role of banks in financing industry had changed to the bankers disadvantage, it would be more advantageous to lend indirectly to industry rather than directly."[14] Besides, with the presence of excess liquidity in the system instalment credit provides a good outlet for profitable lending.

Section II

Security Devices and Loan Methods

The discussion in this section relates to the nature of security devices that may be used in order to obtain advances for instalment financing. They may be studied under the major types of loan classification depending upon the period of the advance. Under the short period financing technique, the two commonly used loan facilities are

[12] Neifeld M. R. *Trends in consumer Finance* (Pa 1954) p. 39 and p 47.

[13] Madan B. K. *op.cit.* p. 523.

[14] Lord Rotherwick, Governor of the Commercial Bank of Scotland, Annual speech 1954.

the endorsement and the inventory loans and the security devices employed are factor's lien, trust receipts and chattel mortgages. The third loan facility emanates from receivables or the instalment paper. When the period of lending is over one year, the term loan comes into existence, it being either of a medium or a long-run nature. The security device is the instalment contract in this case.

Endorsement Loans

Endorsement loans generally consist of two-name paper, that is all loans secured by a promise to pay by two or more individuals or institutions, technically referred to as "co-maker loans."[15] Really speaking, endorsement and co-maker loans do not legally possess identical implications. A co-maker signs the face of the note jointly with the borrower, while an endorsement usually appears on the back of the note. At maturity the co-maker note can be presented to either of the makers for payment, while under an endorsement, the creditor can hold the endorser for payment only after exhausting the civil remedies for default by the principal debtor. It is a general practice in this country to insist on co-maker loans, even when the loan may be secured by a pledge of business assets. The endorsement on the collateral loan is preferred by borrowers as it does not interfere with the normal operation of business as some types of inventory and receivable-secured loans do. Secondly, if an acceptable endorser could be obtained, these loans are more convenient obviating much paper-work routine prescribed in pledging of assets. The prime disadvantages are that it creates possible loss of non-business assets (when endorsement is by an officer or owner) if the business should run into trouble; and that, it is difficult to secure outside endorsers, owing to the hazard of antagonizing a close associate unwittingly should he, as endorser or co-maker, be required to make good the business' obligation.

Inventory Loans

Loans secured by inventory, that is stocks and stores, are obtained to finance the storage, processing or shipping of commodities. Businesses borrow whenever possible on an unsecured basis to finance inventories and in many cases, borrow by pledging other assets because conveyance of title to the lender may interfere with the borrower's use of the inventories.[16] From the lender's point of view, many short-term unsecured loans are in a sense inventory loans because that is the essential purpose for which they are granted. It can be argued, that loans to help a business finance its receivables are indirectly inventory credits in the sense that the investment in receivable itself

[15] Young R. A. *Personal Finance Companies and their credit practices* p. 49 (NY 1940).

[16] Dauten C. A. *Business Finance* (N. J. 1956) pp. 107/115.

arises out of the seller financing inventory needs of the buyer. The term inventory loan, however, has come to be applied only to those cases where inventory is actually offered as pledged security.

These loans which may be applied largely to short-term borrowing depend in their extent and margin upon several factors such as the general credit position of the borrower, the perishability or otherwise of the products, the frequent turnover of stocks, marketability of commodities, the price stability and the nature of the lien. "Pledge of a ware-house receipt, for instance, gives the credit greater security than a factor's lien since goods in the former case are in the possession of a third party, a warehouseman, while in the latter case, they are in posession of the borrower."[17] Sometimes, however, inventories may be pledged in the lenders godown when it becomes a key loan. If it is at the borrower's place of business, it is called an open loan, with or without a stipulation to place the lender's sign-board prominently displayed at the debtor's godown.

In terms of cost, inventory loans are higher than many other types of secured credits, the reason being the nature of the assets pledged. Most inventory items are easily movable and turn over rapidly in the ordinary course of business, and the specific inventory articles which are the security of the loan are often difficult to identify. When inventory is secured as security, lenders are concerned about two points in addition to ensuring that the value of the inventory is in excess of the loan. These are protection against fraud on the part of the borrower and ensuring that they have just claim against inventory from all other creditors in case the borrower becomes insolvent. If the creditor does not have fully covered claim of specific items of goods in the event of foreclosure, the supposed protection may turn out to be a mirage.[18] In endeavouring to protect themselves on these two scores, considerable costs may be incurred either directly by the creditor or by the borrowing firm.

Security Devices

The security devices used to obtain endorsement and inventory loans may be bills of lading, warehouse receipts, factor's lien, trust receipts and chattel mortgage. Of these, we are concerned with the last three as they alone are utilised by instalment lending agencies.

Factor's Lien:

"Factor's lien is a method of pledging the inventory in bulk to a financial institution as security for a loan."[19] It is most frequently

[17] Gerstenberg C. W. *Financial Organization and Management of Business* (NY 1951) p. 879.

[18] Dauten C. A. *op.cit.* p. 315.

[19] Howard B. B. and Upton M. *Introduction to Business Finance* (NY 1953) p. 396.

employed by finance companies in connection with the financing of accounts receivables. Factor's lien security device is superior to the pledging of warehouse receipts since it enables the business to retain possession of its inventory at all times. It may involve laborious record keeping, depending on the requirements in this regard imposed by the lender, but it is still preferable.

Under this procedure effecting a factor's lien is as follows: The borrower indicates on a designated form the merchandise to be liened. Where the pledge is to cover all the inventory, this form may be accompanied by a copy of physical or book inventory records. In case of revolving credit facility the borrower designates new merchandise as it comes into his possession, with a periodic check on the stocks. A notice of recording of lien is made and a collateral, demand or time note, signed by the borrower taken as additional security. Further, adequate insurance coverage may be insisted upon by the lender, with the interest of the creditor endorsed on the policies.[20]

Where the agreement provides, the lien continues through the whole manufacturing process, right from raw materials to finished goods. When the goods are sold on credit, the account receivables take the place of inventory as security. "The collections of the accounts provide the means of liquidating the debt."[21] The weakness of this device is that the percentage of value that can be borrowed would ordinarily be less for most businesses than the use of warehouse receipts or other security devices. Further when all the inventory is made the basis of the lien it will include goods in process, semi-finished parts or finished articles which if seized by the creditor, would be of little value to set off the loan. Besides, this method of financing is very hazardous, as a careful lender will have to spend more time and effort in checking the collateral and business to make sure that all provisions of the loan agreement are adhered to. Once again, because of the constant vigilance and much administrative work, the costs of lending are increased which in turn reflect in a higher interest rate charged.

Trust Receipt

A trust receipt is a method of lodging title to goods in the hands of the lender while the goods themselves are in possession of the borrower. Its use is limited to transactions where goods, documents of title to goods, or instruments involved are to be held for sale or exchange, or where the purpose is to manufacture or process the goods for eventual sale. For example, it is employed in the United States and the United Kingdom by automobile dealers and distributors and

[20] Cox, R. *The Economics of Instalment Buying* (Ny 1948) p. 118.

[21] Bonneville, J. H. and Dewey, L. E., *Organizing and Financing Business*, (NY 1952 5th ed.) p. 120.

retailers in major household appliances for financing products held for sale and in preparing goods for shipment and transferring them from dock to vessel.

As with the factor's lien the borrower has possession of the inventory and, therefore, lenders are particularly cautious to whom they grant credit under this device.[22] Upon the resale of goods by the borrower, the lien is released and the borrower is obliged to hold the proceeds of the sale for the lender. A business receiving possession of goods under a trust receipt will be required to keep thorough records and will be subject to frequent checks by the lender.[23]

Trust receipt financing is initiated by the dealer, signing an agreement with the finance company covering the manner of handling all trust receipt transactions.[24] The lender then files a statement of trust receipt, with the public registrar. There are a number of ways by which a business can gain possession of the goods in exchange for a trust receipt and note. For example, when a purchase is made, the seller may be instructed to make out the invoice and draw an order bill of lading upon the lending institution. The lender endorses the bill of lading over to the borrower in exchange for the trust receipt and note. The latter form the basis of the loan, the proceeds of which are paid directly by the lender writing a cheque to the order of the seller. A demand note is often used because it is uncertain when the particular goods, such as radios, will be sold and the note paid. The advance against the trust receipt is gradually liquidated by the payment of instalments at specified intervals.

Receivable or Other Assets

The two most popular methods under this headings are accounts receivable and instalment receivable. Every credit sale gives rise to an asset, either an account receivable or a note receivable, on the books of the seller. Of the two, accounts receivable is important for business establishments. Notes receivable arising from the sale of goods are useful mainly in certain types of retail business such as durable goods. Because of the difference between accounts and note receivable (one represented by open book accounts and the other by credit instruments) and the types of transactions in which they are used, considerable differences in loan methods have developed. For this reason, they are taken up separately.

[22] Beckman, T. N. and Bartels, R. *Credits andCollections in Theory and Practice*, (5th ed. NY 1949), p. 279.

[23] This is to prevent sales out of trust. See Parker, F. (ed.), *Consumer Credit Course*, (Philadelphia 1951) p. 202.

[24] Moulton, H. G., *Financial Organization and the Economic System*, (NY 1938), p. 271.

Natification Financing of Accounts Receivable[25]

For sake of convenience, accounts receivable financing is divided into the notification and the non-notification plans, depending upon whether or not the debtor whose account is sold or pledged is notified. Commercial finance companies in the West largely restrict their receivable loans to the non-notification type, while factors engage primarily in the notification type. The agreement again may be a recourse or a non-recourse one. In the accounts receivable on a non-recourse basis, the accounts receivable of business using a factor do not appear on the balance sheet. The only receivable shown would be the amount of the proceeds of the sale left on deposit with the factor.

Businesses borrowing on their accounts receivable, on a non-notification basis, show the full amount of the pledged receivables among the assets with an offsetting note payable for the amount borrowed.

When the factor buys the receivables on a non-recourse basis it insists on screening the credit records of the probable customers. Because in most cases businesses sell all their accounts receivable to a factor, there is no need for them to maintain credit and collection departments.[26] They thus eliminate one business function that must be performed by all other firms selling on credit. This is done by factors who maintain detailed accounts receivable ledgers and in some cases prepare and mail customer's invoices.

"The credit procedure is initiated by the borrower and factor signing a contract setting forth the terms and conditions under which the factor will agree to purchase the accounts receivable."[27] The firm then submits each sale to the factor for credit approval. Where it is the practice of the business to ship goods from stock on hand, the factor sets up a 'line of credit' for each customer within which the firm can make deliveries. When the goods are shipped, an invoice is made up and mailed in the regular manner but on it is printed a notation to the effect that the customer is to make payment directly to the factor. Copies of bills of lading and shipping receipts are forwarded to the factor, these documents being required as proof of shipment to prevent a borrower from marking up and selling fictitious accounts.

On receipt of notice of shipment, the borrower is immediately credited with the amount of the invoice minus the interest charge for the credit and factor's commission. Interest at the rate of 6½ per cent p.a. is charged for funds advanced before the average due date of

[25] Saulnier, R. J. and Jacoby, N. H., *Accounts Receivable Financing*, (NY 1943).

[26] Steiner, W. H., *Mrecantile Credit*, (Ny 1936), pp. 188/89.

[27] Silverman, H. R., *Factoring as a Financing Device*, (H.B.R., Sept., 1949, pp. 594/611).

the receivables purchased. If funds are not withdrawn before the average due date, no interest charge is levied because there has been no financing, and if funds are left on deposit with the factor after the average due date, the firm is paid interest by the factor at the rate of ½%. The factor's commission varies between 1 to 3 per cent depending upon the volume and terms of sales, class of customer, average size of invoice and competition. It constitutes the charge for credit checking, bad debt losses, collection expense, and in general, the costs of the factor's operations.[28] As soon as the goods are shipped the borrwing firm may withdraw the amount credited to its account with the exception of a small percentage, 5 to 10 per cent of which is retained by the factor as a margin for protection against returns or allowances made on merchandise.

Factoring as a method of securing credit is a very convenient and an exceedingly flexible way of borrowing.[29] The amount available automatically increases or decreases with sales. Even though all accounts are sold to the factor, the business need not withdraw funds immediately and pay interest on them. There a business has to stand its own bad losses, it might limit credit to large purchasers because it does not want to concentrate much of its risk in one account. But by factoring its accounts the limit of credit sales to a single customer can be raised with safety. The use of factor, moreover, substitutes a variable cost for the fixed cost of maintaining a credit and collection department, thus lowering the break-even point of the firm. Finally, the management is relieved of the credit and collection problem entirely and can devote its attention to the primary function of business merchandising, manufacturing, or whatever it may be.

The possible disadvantages are that of cost and reduction on sales. The cost may be divided into a consideration of the cost of credit measured by the rate of discount on the receivables sold and the cost of the credit service measured by the factor's commission. The former generally will not be above rates that would be charged by other lending institutions. The charge for the credit service thus becomes the determining factor it being higher or lower, than if the dealer assumed his own credit risk and undertook collections. Besides, if the credit standards laid down by the factor are strict, "sales would be restricted reducing the possibility of profits."[30] However, the reduction in profits due to loss of sales may more than offset the additional credit costs involved arising from the maintenance of a credit department and bad-debt losses.

[28] Bonneville and Dewey, *op. cit.*, p. 225.

[29] Moulton, H. G., *Financial Organization and the Economic System*, (NY 1938), p. 264.

[30] Phelps, C. W., *op. cit.*, p. 71.

Non-Notification Financing of Accounts Receivable

"Non-notification accounts receivable financing involves the pledge of customer's accounts as security for a loan without the customers knowing that their accounts have been so pledged."[31] This type of receivable's financing is more like the other types of secured financing than the notification plan. There is no outright sale of the receivables; the borrowing firm bears all bad-debt losses and credit expenses. The accounts are a pledged asset which can be seized by the lender in case of default.

The borrowing methods vary depending upon the particular arrangements worked out between a lender and a borrower. In case of each borrower, it will depend on his credit standing or that of the debtors whose accounts are to be assigned, the number and the size of the accounts, and such other considerations. Some of the principal methods are discussed assuming that detailed procedural differences prevail.

There are two general systems by which a business may secure funds on a non-notification basis. First, and most common, is the assignment of accounts receivable to the lender and the execution of note.[32] Through assignment, the lender acquires the same right to bring legal action for the debt that the assignor possesses. The second method is to 'sell' the accounts to the lender, which obviates the need for executing the customary pronote. The operational procedure of the two systems is very similar except for the presence or absence of a note. In case of assignment the duplicate copies of the invoices and the accounts on the receivables ledger are marked "assigned to" and in the purchase arrangement, they are marked 'sold to.' As this loan is unsecured lending companies put a greater reliance on the security and more careful auditing of the borrower's accounts.[33]

The loan is initiated by the execution of agreement which includes all the terms under which funds will be advanced, the percentage of margin to be maintained, the rate of interest and service charges, the agreement to replace old accounts and reimbursements for returned goods and allowances, conditions under which direct notification of the customers will take place, evidences of delivery, records to be kept and furnished by the borrower etc. The percentage loaned to accounts pledged varies from 60 per cent to 90 per cent, depending on the quality of the accounts, the credit standing of the borrower, the cash discount

[31] Gerstenberg, C. W., *op. cit.*, pp. 381/382.

[32] Ayres, M. V., "Evolution in the Financing and Selling of Motor Vehicles," (*Time Sales Financing*, July 1939, p. 3).

[33] Drake, M. J., "Accounts Receivable Financing", *Bulletin of the Robert Morris Associates*, July, 1947, pp. 44. Quoted by Howard and Upton *op. cit.*, p. 407.

offered, past experience of payment and the profitability.[34] Ordinarily, the margin required will be of such a size that the borrower does not obtain any profit from the sale until the final collection of the account.

The interest and service charges are handled in a variety of ways. Banks state these charges separately while finance companies a single overall rate. The interest rate charged by a bank will be the usual one prescribed for other types of credit but the service charge may be stated as a per annum rate on the outstanding loan balance, or it may be based on the number of invoices handled. The finance company charge may be made as a discount on the face of the individual invoices assigned, "or it may be usually taken as a flat interest charge based on the average daily balance of either the cash advanced or the face value of invoices assigned."[35]

The lenders require replacement of overdue accounts in order to maintain the quality of the security behind the loan. The usual stipulation is that the borrower must buy back or replace with current accounts any invoices held by the lender that are more than 30 days overdue. They also insist on verification statements, to check whether merchandise described in each invoice has been delivered to the buyer etc. "This prevents the drawing of fictitious invoices."[34] The verification statements or evidences of delivery may be bills of lading or any other equivalent certificate signed by the buyer or his agent.

The note accepted may be either a demand or a time note, and where a business borrows over an extended period by pledging separate lumps of invoices, several notes may be outstanding at the same time, or each new note may be used to pay off the old note so that there is only one outstanding. A separate assignment form listing the individual invoices pledged is signed by the borrower in addition to the note for each separate borrowing transaction. The assignment or the loan agreement contains a provision that the borrower is acting merely as a trustee of the lender in the collection of the assigned accounts and that he will immediately forward the original payments received from all accounts, that are assigned. The collections may be applied to the total of the loan allocated to specific notes, if time notes are used, or deposited in a collection account which is applied to the loan periodically.[37] This latter method tends to increase the cost because the borrower is paying on the outstanding loan balance. In some instances, the lender returns the margin received from each group of

[34] Gerstenberg, C W., *op. cit.*, p. 381.

[35] Burman, R. W., "Practical Aspects of Inventory and Receivable Financing" *Law and Contemporary Problems*, Oct., 1948, p. 560.

[36] Howard and Upton, *op. cit.*, p. 403.

[37] Dauten, C. A., *op. cit.*, pp. 99/107.

collections, while in others, the entire amount of the collection is applied to the loan.

The lender usually maintains his own record on each debtor showing the debtor's credit rating, limits stipulated, the date and amount of each invoice purchased, and the ultimate disposition of each invoice, whether by payment or repurchase. These records are reconciled with those of the borrowers at frequent intervals. Where all accounts are assigned by a business, the individual invoice by invoice recording is sometimes dispensed with. It may have been noticed that non-notification accounts receivable financing, like factoring, borrowing on warehouse receipts, and factor's lien, is a revolving type of credit. Once the arrangement is set up, borrowing by this method can continue indefinitely. Especially, from the borrower's standpoint the advances are self-liquidating ; he does not concern himself with repayment problems and except for the margin requirement it is identical to a cash sale.

Instalment receivable loans

Among two large classes of business, credit sales give rise to notes receivable rather than accounts receivable. For example, retail stores, dealing primarily in consumer durable goods, such as automobiles, appliances and furniture ; and second is manufacturers and distributors of equipment sold to other business firms for their own use holds accounts to be paid in instalments.[38]

Retailers accounts receivable (charge accounts) are not an asset that can ordinarily be used as security for a loan ; but the instalment notes are acceptable as security to sales finance companies and commercial banks, who are the principal lenders because (1) the customer signs a pronote with guarantors and co-obligants ; (2) the average receivable is much larger ; (3) the customer usually takes possession of his purchase under a conditional sales contract which provides that he does not obtain title until the last payment on the note is made. It is thus easier for the lender to repossess the article ; (4) a down payment is generally made, which means that the consumer has an equity in the article which he would lose if he defaulted on the note ; (5) most of the commodities purchased on an instalment plan are durable goods which possess a higher resale value than do other goods. The instalment notes are very useful in obtaining immediate cash for credit, when a dealer does not desire to finance his own credit sales but 'sells' his receivables to a financial institution.[39]

[38] Saulinier, R. J., *Industrial Banking Companies and their Credit Practices*, (NY 1940).

[39] Inskeep, E. E., *Financing Automobile Sales.* (Credit and Financial Management. Aug. 1946, p. 6).

The prospective customer ordinarily signs three documents ; (1) a promissory note for the amount of the unpaid balance ; (2) a conditional sales contract, chattel mortgage or bailment lease, and (3) a purchaser's statement.[40] The pronote is the evidence of the debt ; the conditional sales contract etc. is the security for the debt ; and the purchaser's statement is the customer's credit application. The retailer endorses the note or contract, hands it to the finance company or the bank, and is paid cash equivalent of the face amount, less the finance charge, the insurance premium and the margin. The dealer is now out of the picture since the customer makes his payments directly to the financial institution. The liability of the dealer in the event of default of the customer depends on the agreement between the dealer and the finance company or bank namely recourse, non-recourse or limited recourse basis.

The calculation of the cost of this type of financing is different from that of other forms of business borrowing, it being measured by the additional income the retailer gives up by not financing his credit sales himself. The finance charge is typically computed as a per cent of the original face value of the note.

Instalment Receivable Financing

Where the instalment receivable exceed amortisation over a year, the term loan method is adopted.[41] It is characterised primarily by length of amortisation, method of repayment, collateral security and the inclusion of protective covenants in the loan agreement. Ordinarily, it is thought of as a cash instalment loan made by a commercial bank or other financial institution lasting for 10 years or less. "The most common feature of term loans is a plan for instalment repayments under a predetermined schedule." says Dr. Hothausen.[42] Most of the term loans are secured, the form of collateral running from accounts receivable to fixed plant, though the more standard items are machinery and equipment, buildings and occasionally stocks and bonds. Current assets are seldom used. The smaller loans commonly carry a security provision, the reason being that they are usually made to smaller well-established businesses and, therefore, carry with them a higher risk. The recent tendency in this connection is for greater reliance to be placed on protective warranties in the loan agreement rather than on specific collateral security.

Some of the more common types of protective clauses are those which (1) require the maintenance of a given working capital position,

[40] Plummer, W. C. and Young, R. A., "*Sales Finance Companies and Their Credit Practice*, (Ny 1940).

[41] Saulnier and Jacoby, *op.cit.*, Duncan Holthausen "Term Lending to Business by Commercial Banks in 1946," *F. R. B.*, May 1947, pp. 498/517 ; Prochnow, H. V., *Term Loans and Theories of Liquidity*, (Ny 1948).

[42] Holthausen, *op. cit.*, p. 357.

(2) limit the payment of dividends to or withdrawals by owners ; (3) prevent the sale or other disposition of certain basic properties ; (4) limit the extent to which other obligations may be incurred, particularly those involving a preferential lien against property of the bssiness ; (5) require strict compliance with the terms or other obligations (payment of taxes, interest on other debts etc.) and (6) require the maintenance of suitable accounting records and preparation of reliable periodic reports therefrom. The manner in which these restrictions are imposed may take one of two forms.[43] On the one hand, there may be a flat prohibition against any encumbrances (liens) being placed upon the assets of the business ; or there may be the dormant (or negative) type of provision which becomes operative only if there is failure to comply with requirements on another score.

Uses for which Term Loans are Suited

The term loan is especially suited for expansion of either fixed assets or working capital that cannot be readily financed out of the current year's earnings. Because of the extreme difficulty with which the small or medium sized business can raise equity capital, the term loan acquires additional importance. The loan allows the purchase of machinery or an expansion of current assets, which, in turn, would contribute to an increase in sales. With this increased sales volume the business has the expanded profits as well as existing earnings with which to discharge the debt. As the term of the loan passes, the business substitutes equity capital in the form of retained profits for the debt. This substitution is accomplished each time an instalment payment is made until the asset is wholly owned. Moreover, the intermediate maturity protects the borrower against the hazards of inability to renew credit limits under the conventional short-term loan.[44]

Requirements of Term Lenders

Although the various suppliers of term loans maintain different requirements and employ various methods, these are mainly differences of degree rather than kind. Most lenders in judging credit risk and limiting their own possible loss are primarily interested in four things : (1) the earning potential of the applicant ; (2) solvency and financial structure ; (3) general considerations pertaining to the business and its management, and (4) protective covenants and collateral security.[45] The basic difference in a term lenders thinking is a shift of primary attention from the current position, or solvency, of the business to the ability of the borrower to generate cash for loan repayment out of earnings. This is not to say that the other two factors of solvency and

[43] Howard and Upton, *op. cit.*, pp. 425/436.

[44] Phelps, C. W., *Instalment Sales Financing :Its Services to the Dealer*, (Baltimore, 1953), pp. 11/20.

[45] Gerstenberg, C. W., *op. cit.*, pp. 468/69.

management performance are not important ; it is merely intended to indicate the shift in emphasis that must take place to compensate for the basic differences in the two loan arrangements with their associated differences in risk.

Since the term loan is generally intended to fulfil a quasi-fixed purpose, the ability of the borrower to repay the loan depends upon earnings because no intention of liquidating the assets exists. A study of the long-run strength, however, cannot disregard the factor of technical solvency ; for an otherwise profitable business can be hamstrung by depleted liquid resources or a continued threat of insolvency. furthermore, protection of any business investment is dependent upon careful management of cash position as well as successful profit performance. Once the loan application is accepted, no limitation of any kind is imposed on the use of the funds unless it is granted for some special purpose, such as refinancing short-term debts. But the right to a continuous review of the borrower's position is generally provided by acquiring access to all books of account at intermittant intervals or preparation of special reports pertaining to financial position and operating performance.

Conclusions

Our analysis reveals that there is no prohibition in theory or practice on commercial banks from expanding into the *terra incognita* of consumer instalment lending. As indicated in the paper opposition on theoretical grounds can be restricted to the Commercial Loan and Shiftability and Marketability theories. But as shown by us, these doctrines are in themselves inadequate and do not fulfil the ideal conditions prescribed. Moreover a highly destructive flaw in the above theories is that they do not keep abreast of bank practices. Fortunately the evolution of a new liquidity doctrine propounded by H. V. Prochnow, called the Anticipated Income Theory, bridges the gap in theory and practice. We have incorporated in its general framework the particular requirements of the consumer instalment credit. This enables us to apply the theory's basic tenets to this field also.

While in theory there is no bottleneck to consumer instalment lending, it is empirically observed that banks are reluctant in treading uncharted spheres. The variables which restrain the forces of progress are apprehensions regarding complex organizational problems and heavy risk associated with such form of lending. We have discussed the blockades as not insurmountable, the real cause in our opinion being traced to mass inertia. What is required is the pioneering acumen of one of the banker's whose success in course of time will gain several adherents. The ball has been set rolling in this direction in India, though considerable leeway has yet to be made.

This requires the institution of new techniques of lending and their associated security devices. In so far as lending methods are

concerned, our banks are familiar with the twin methods of endorsement and inventory loans. However, our banks are not fully conversant with the two security devices: factor's lien, and accounts receivable. We have, therefore, analysed in detail the technique of factor's lien and accounts receivable and shown how the two may be applied.

It may be contended that the collateral so created may not find favour with "the lender of last resort,' the Reserve Bank of India. This is not a serious argument as in the recently concluded two-day seminar on banking, a responsible officer of the Reserve Bank of India, showed the Bank's willingness to innovate in the collateral market. It is left to the banks to test the genuineness or otherwise of this offer. This action of the Reserve Bank it may be noted instead of narrowing the liquid assets market, enlarges its size as well as its scope. Therefore, we may conclude that commercial banks should progressively enlarge their advances to the sphere of consumer instalment lending.

Bombay KERSI D. DOODHA

REVIEWS

Marketing Problems and Improvement Programs. By J. C. ABBOT. (Rome: Agricultural Organization Marketing Guide No. 1, 1958, pp. 203, $2.50 or 12s. 6d.).

IT is being increasingly recognised that production is but part of the agricultural process. The prosperity of the agricultural, and through it, the other sectors of the economy is dependent as much on the emergence of a surplus as upon the efficient and economic distribution of it. An abundance in agriculture when complemented by efficiency in the marketing structure, can well provided the base to economic development.

The publication under review is an outcome of the assistance in marketing programmes, which the United Nations seeks to afford to its member countries through the Food and Agriculture Organisation. It is the first in the series of marketing guides and is to be followed with an extended commodity marketing coverage.

The purpose of the publication is expounded at the outset as *viz.* "to promote a better understanding of marketing, to bring about a wider appreciation of its significance and to indicate ways in which existing marketing practices may be improved." It is an interesting addition to the literature on the subject; to be welcomed especially by developing economies which desire "to avoid producing the wrong type of goods, at the wrong place, at the wrong time and are to use their agricultural resources to the best advantage."

Apart from whatever new light he sheds on the problems of marketing, the author is credited with the ability of saying well what has been already said on the subject. The latter is characteristic of Chapter I which restates the usual demarcations adopted—functions, services, agencies and organization wise.

What is striking throughout is the realistic and practical approach to the problem. Nowhere does one find a particular feature discussed without adequate consideration of its relation, merits and applicability to the situation in question.

The author validly observes that improvement of marketing systems has necessarily to wait upon developments in the production pattern itself. Hence he cautions against the unqualified adoption, by the less developed economies, of marketing procedures of advanced economies having radically different agro-economic structures.

That new developments in marketing should be in accordance with the particular requirements and stage of development of the country in question is constantly stressed. As one example of success, due to implementation of a well-suited improvement scheme, is cited the construction, in Kashmir in 1921, of 40 silos, each of 370 ton capacity, from local wood and at moderate cost, which could store paddy for a twelve-year period with an average loss of less than 1%. In contrast, is recalled the construction of frigorificos in Latin America, designed for the housing of grain far in excess of the few sacks which are now secured for storage.

An interesting observation is made by the author in relation to the setting up of compulsory market structures which strike the reviewer as having some bearing on recent recommendations in India of restriction of sale of produce in a regulated market region, at the market yard (Shirname Committee Report)—thus penalizing the occurrence of sale at points other than the regulated market yard in the market proper. Mr. Abbot states that: "by depriving farmers of all alternative outlets, such measures remove the main check on administrative weakness in less developed countries, namely, freedom to take business elsewhere." In a later section on regulated markets of India he also states that "a sure indication of efficiency in a market is a growing volume of turnover without any dependence upon compulsion."

One cannot help gathering the impression that Mr. Abbot, be it in his discussion on regulation of market malpractices or the enforcement of uniform grading procedures, is of the opinion that more is to be gained from pursuing a policy of minimum intervention. He would like to give full berth to market forces, for the evolution of a structure which will be efficient because the agencies most effected in the scheme, give sanction to it by patronizing it.

Of merit is the approach to improvement programmes outlined in the book. Changes in the direction of greater efficiency could be ushered in by private enterprise, group action, government intervention or international assistance. Government intervention could be in the form of regulatory and/or facilitative programmes or could involve direct participation of the state in the assembly, processing storage or transport of agricultural poduce. Government desirous of correcting any serious imbalances in existing marketing procedures would do well to examine the alternatives offered—ranging from laying down the rules of the game, to direct participation in the game itself.

Of regret is that the author, having drawn upon the conditions existent in innumerable countries of the world, has been unable to pinpoint the specific areas most in need of attention. He has not

been very direct in his recommendations for improvement for particular ailments in marketing schemes. Whereas he deprecates the unimaginative imitation of advanced marketing modes and also recognizes that traditional structures cannot be reconditioned overnight it would have been appreciated if Mr. Abbot had stressed certain features worthy of emulation, at least on occasions and in regions where new commodities were sought to be introduced in the production pattern.

In conclusion, one hopes that this publication shall be utilised for its full worth by the marketing advisers, administrators, marketing organizations and state, co-operatives, and private concerns handling agricultural produce, for whose assistance it has been primarily designed.

Bombay — Z. Y. JASDANWALA

Small-Scale Industries in Delhi. By P. N. DHAR. (Bombay: Asia Publishing House, July 1958, pp. 277).

THE Research Programmes Committee of the Planning Commission has sponsored a number of surveys on cottage and small-scale industries in different places such as Allahabad, Amaravati, Baroda, Bombay, Delhi, Meerut, Moradabad, Mysore, Nasik, Salem, Saugour, and Sivakasi and Sattur. The book under review represents the report on the survey of small-scale industries in Delhi undertaken by Mr. P. N. Dhar at the Delhi School of Economics. The investigation was conducted during 1954-55 and the data collected pertain to the year 1953-54.

For purposes of this study a small-scale unit was defined as a manufacturing or processing establishment working with not more than 19 and not less than 2 persons and with a minimum block capital of Rs. 250. In all 13 industries were selected for investigation. The units from these industries were selected on the basis of a random sample with its fraction varying according to the number of units in the industry, it being one-half for industries consisting of less than 50 units, one-third for those consisting of between 50-75 units, one-fourth for those consisting of 75-150 units and one-fifth for those consisting of above 150 units. In all the total of the units amounted to 326 the industry-wise coverage being as under: Flour mill 55, Printing presses 54, Trunk manufacture 38, Leather footwear 34, Light engineering 25, Electrical goods 18, General engineering 17, Hosiery 16, Soap 15, Foundries and Oil mills 14 each, and Drugs and Electroplating 13 each.

The study is divided into three parts. Part I consists of the introduction dealing with the nature and objectives of the enquiry. Part

II embodies the general results regarding certain general characteristics of these industries, capital structure and financial position, output and its coefficients related to labour and capital. In Part III are presented the detailed data on individual industries. On the whole the report is commendable for the nice analysis of the collected data and the neatness in presentation.

Of engaging interest in current controversies on small *vs.* large industries is the discussion on the capital and labour productivities, of one size of industries *vis-a-vis* of another. It is rightly realised that many a point of dispute in this regard can be easily settled by an appeal to the actual facts from the industry life. Such data unfortunately are, very scarce. Mr. Dhar therefore deserves praise for concentrating on this aspect, collecting the data required in this connection, analysing them into a proper perspective and in thus throwing factual light on these issues. Some of his conclusions in this regard may therefore well bear citation here. On the capital-output ratio: ".....the shift to more advanced techniques as reflected in the use of power does not uniformly involve an increase in their capital-output ratio "(p. 73). On capital-labour ratio: ".....capital employed per worker rises uniformly and much more significantly than the capital output ratios, as we move from non-mechanised groups to mechanised groups." (p. 76) On output-labour ratio: "..... the data ..... do not conclusively or in all cases support the proposition that productivity of labour goes up with the use of power or with increase in the size of the unit as measured in terms of labour employed." (p. 79) On the amount of surplus with respect to the type of entrepreneurs: " For example, it has been found that where the proprietor is a craftsman-entrepreneur rather than a merchant, who has moved up the ladder by proficiency in his crafts the tendency to plough back surplus into his business is very prominent. This trend is particularly evident among the refugee craftsmen who have set up small industries in recent years." (p. 82). It is to be hoped that a pretty good data on similar lines would be available from the other RPC Survey reports also so as they might serve us as guide-posts in the present stage of the precariously scanty knowledge on these aspects of the problem.

There are however a few points on which the reviewer feels that the author of the Delhi Report should or could easily have fared better. In the first place, in the evolving of a rightful policy towards this sector it is equally necessary to get factual information on the types and problems of small industries as also to obtain a picture of how and where they compete with large-scale units and their relative advantages. There is but little study of these issues in this enquiry. The rejoinder that these did not fall within the very terms of the schedule or that it was initially itself decided to concentrate on certain

particular aspects only raises the broader question (and consequently makes the point of criticism all the more weighty) as to how such a rather complementary and vitally important issue should have escaped attention or should have come to have been considered as so separable. Secondly, many a small-scale unit is known to be suffering from considerable degree of surplus capacity. For example of the 236 units investigated in the survey as many as 249 or over three-quarters were suffering from excess capacity to the tune of over a quarter or more, 169 or over one-half from between a quarter and a half, 51 or one-sixth from between a half and three-quarters and 29 or one-tenth from over three-quarters. There is another consideration also to be taken note of along with this fact. In the existing climate of protection for the small-scale sector, many a small industry is likely to spring forth and this cannot but result in the accumulation of idleness in the economy in face of the absence of any significantly redeemable change in regard to the first fact. Thus, one feels that in view of the widespread nature of idle capacity in the existing units as well as of the dangers of a non-judicious entry of small-scale industries, the topic of excess capacity should have been given a due that is of greater prominence with a detailed discussion thereof in this report and dealt with in Part II on General Results along with the other important topics. Thirdly, the addition of a section or two embodying the principal findings of the survey and the important suggestions made in the light of the author's experience with the enquiry inserted at an appropriate place, say at the end of Part II, would certainly have enhanced the usefulness of the report.

One additional general comment may be offered. The data collected in this report relate to the year 1953-54 ; the field investigation was conducted during 1954-55 ; the analysis of the collected data and the preparation of the drafts were all over in July 1956 ; and the report was published in July 1958. One therefore comes to know of the conditions of 1953-54 not earlier than in the second half of 1958, after the lapse of a period of not less than five years. A lag of about this length, it is said, is supposed to be not uncommon, if not quite typical, of many such enquiries. Is it not possible for us to move fast into the matter, to realise the importance of the speed and reduce the length of this lag, of course without sacrificing the quality ? This is a question which one wishes ought to be earnestly considered by all concerned both in the interest of sustaining interest in the topics of enquiries as well as of making the results of our enquiries more useful so as to serve some practical or policy ends for which investigations might have been designed or sponsored.

Bombay J. C. SANDESARA

1. *Water—Resource Development: Economics of Project Evaluation.* By OTTO ECKSTEIN. (Cambridge: Harvard University, 1958, xiv+300).
2. *Multiple Purpose River Development.* By J. V. KRUTILLA and OTTO ECKSTEIN. (Resources for Future, Inc., 1958, xiv+301).
3. *Criteria for Fixation of Water Rates and Selection of Irrigation Projects.* By N. C. A. E. R., New Delhi. (Bombay: Asia Publishing House, 1959, xii+156).

THESE three books are studies on the fixation of investment criteria for the water resource field. The theoretical basis and its applicability to actual projects are discussed separately in each of them. As all the three cover the same field, one may confine to the book by Eckstein because that seems to the reviewer the most comprehensive.

The study includes firstly the general theoretical framework of benefit cost analysis. Assumptions are discussed and some rationale for the program is found in the theory. Some general issues of benefit cost practice, such as forms of benefit cost criterion, and adjustments for risks (in all the fields where the analysis is applied) are discussed. The application to projects is also studied.

The assumptions of the competitive model and the limitations of the same are described to justify government intervention on the grounds of efficiency. In a market economy preferences on the basis of indifference technique reveal how producers and consumers try to maximise profit or satisfaction. To approximate this behaviour, the more sensitive substitute of benefit cost analysis is applied to non-marketable collective goods. The aim is: maximization of benefit by investment to the point where future net benefit must at least equal the cost of the marginal investment. "The benefit cost criterion, under ideal procedures, provides the same answer that the market mechanism would provide if it were free to function for collective goods."

In arriving at the criterion, the benefits as well as the costs are classified to indicate how far they can be measured in money terms. Of course the effects with and without the project need specific evaluation to isolate the benefits of a project. The rate of return on a project is compared with the benefit-cost criterion by the author. The former is a good indicator of the soundness of a project. But it is not true, though it appears so, that projects which yield more *benefit* per *dollar of costs* would yield more *return of benefits* per *dollar of investment*. Eckstein compared the two criteria to show that applied to different types of projects, they lead to dubious results in the ranking of projects. Therefore in the choice of criterion he shows

that for any project the value of O/K (O=operating, maintenance and routine replacement costs incurred annually on a project; K=fixed investment on a project) matters most; that the benefit-costs criterion is particularly favourable to projects where O/K is low, which is true of water resource projects.

In an economy where resources are plenty, the criterion requires that all projects with B/C> 1·0 taken up. Projects marginal at this ratio are also marginal under the rate of return criterion i.e., they just yield a return which is equal to the rate of interest. Investments will be optimal under both the criteria. But if there is a scarce factor, optimum result is achieved if the highest rate of return is obtained on that factor. If projects of the highest B/C ratio are done, it is the total resource scarcity that is implicit. Reality corresponds to this situation.

For private enterprise fixed capital is scarce so that rate of return will be the proper criterion. But for public projects, the benefit-cost criterion is preferable, because investment is continuous and in large amounts and O/K is low. Also the criterion takes into consideration the continuous budget constraint and tries to maximise the present value of future income stream.

If the criterion is accepted, "the funds should be allocated between projects that the benefits produced by the marginal dollar of expenditure must be the same as all projects and on all purposes." Otherwise investment in one direction may be pushed to a point where B/C=1, at the expense of opportunities where B/C>1. B/C=1 may be a criterion, only if all the projects for which B>C are constructed and if prices reflect real costs. These conditions are difficult to satisfy.

The acceptance of B/C criterion suggests that projects could be constructed in stages. But the National Council of Applied Economic Research publication suggest that B-C/I (where B=social benefit, C=Cost of agricultural output and I=investment) i.e., rate of return shall be the criterion for choosing projects and in each project investment should be pushed to the point B/C=1. This seems to convey that indivisibilities are absolute which is not true of public projects.

In the criterion, of course, certain adjustments have to be made to provide for risk, depreciation and amortization and interest rate for evaluation purposes. Eckstein suggests that a combination of interest rates and benefits cost ratio should be such that the return equals "the social cost of the funds for public investment raised through taxes" i.e., the opportunity cost of capital. For the calculation of the opportunity cost Krutilla and Eckstein carried out an extensive statistical investigation in Chapter V of their book Multiple Purpose River Dev-

elopment. The choice of prices in the evaluation of benefits and costs is very important to prevent any bias in the ratio.

Waste resource development is multipurpose. If some of the purposes are decided as reimbursable for them total revenue must equal total cost i.e. average prices must equal average costs. But average costs are known only if joint costs are allocable. Further such allocation should not interfere with correct output and investment decisions. And it should agree with the principle of allocation adopted.

Eckstein's logic seems impeccable. But certain doubts on definitions linger. What is benefit and how is it measured ? Benefit is defined to correspond to " that amount of money which he (the consumer) would be willing to pay if he were given the market choice of purchase. This concept can be derived from the classical economic theory of consumption, and has been presented in the basic text-books for many years." Is it a price that a consumer would pay rather than go without the commodity ? If so the measurement of benefit will be measurement of surplus. But " in the case of marketable commodities for which the assumptions of the competitive model could be held to apply, benefit was equal to revenue, or to market value. For some purposes ... benefit cost analysis imputes an equivalent to market value. But for others ... benefits is taken to be equal to alternative cost, the cost of providing comparable output by the cheapest alternative means. In the event that the alternative is not justified, benefit is again limited by willingness to pay." The definition of benefit and its measurement are not clear.

The principle of cost allocation requires that " the purpose which would be most expensive to provide in an alternative way will bear the biggest part of the joint costs. If the alternative would not be justified ... benefits of the purpose replace the alternative cost in the allocation base." What are joint costs ? Joint costs are the total costs less the sum of the actual extra costs due to each purpose. The extra cost of each purpose are called " separable costs " by Eckstein. He says that the principle of allocation agrees with the method of ' separable costs-remaining benefits,' because the cost of providing each purpose separately is greater than if they are combined in one project. And the cost of the alternative for each purpose less the separable costs of the purpose shall be the allocation base.

Will the method interfere with investments and output decisions ? Not for the project as a whole argues the author. Not even for the inclusion of a purpose. For " if the benefit is so low that it barely exceeds the separable costs, the method will not allocate any further costs to this purpose " and the criterion is preserved. But will such a question arise at all, if a project itself is multipurpose and if it passes the B/C

test ? Joint costs allocation is for the fixation of prices of reimbursible projects and beyond that if does not seem to have a place. How they are allocated depends on each project and cannot be made a matter of convenience under a particular norm.

Eckstein points out the limitations of his analysis. It is not applicable to underdeveloped countries and also not to all investment decisions. It does not take into account the distributive effects of a project benefits and costs.

The author devotes individual chapters to flood control, navigation, irrigation, and power. The analysis in the chapter on navigation seems involved in some places (see pages 189 and 190). In spite of these doubts, the book makes very interesting reading because the technical notes are separated from the body of the text.

Krutilla and Eckstein's book covers the same field as Eckstein's book. But the analysis is less thorough. Only Chapter V which deals with the calculation of opportunity cost of capital is of some interest to a student of economics. Such calculations are difficult to make for underdeveloped countries. The book contains a few case studies which may serve as models for the calculation of benefits and costs.

The NCAER publication consists of three parts. Part 'A' deals with the fixation of investment criteria. Part 'B' deals with the principles of determining water rates. The conclusions have been summed up in Part 'C'. There are three appendices. Much data on the Sarda Canal Project and on the field study conducted by the Council are available. Part B which deals with principles of determining water rates will serve as a good introduction for a student interested in the topic.

Bombay K. SUBRAMANYAM

Factor Endowments and International Trade. By SUBIMAL MOOKERJEE. (Bombay : Asia Publishing House, pp. 99, Rs. 8.75).

PERHAPS no aspect of the pure theory of international trade has been discussed so assiduously in the past decade as that linked with the names of Heckscher and Ohlin of the celebrated Swedish school. It is well-known that right from the days of Ricardo, economists have been endeavouring to explain through a variety of theoretical tools the reasons for and the gains that accrue from international trade. The classical theory of comparative costs and its later reformulations were concerned primarily with a demonstration of gains from trade. They failed to touch upon the question of explaining the reasons as to *why* a

situation of differing comparative costs leading to trade possibilities between any two trading countries comes about. The theory developed by Heckscher and Ohlin sought to explain for the first time the reasons for the existence of comparative cost differences in terms of factor endowments. This explains why this theory occupies such a central place in current discussions and dissertations.

The Heckscher-Ohlin theorem, to put it in brief, states that differential factor endowments is the most important factor which determines the differences in comparative costs, and that a country will tend "to export commodities using relatively large amounts of its abundant factors." An interesting corollary of this theorem which was developed by Ohlin building on Heckscher's formulation relates to "the *tendency* towards the international equalisation of prices of factors of production under free trade." This is the well-known Heckscher-Ohlin law of factor-price equalisation.

In recent theoretical literature a number of economists, notably, Samuelson ("International Trade and Equalisation of Factor-Prices" *E.J.* 1948 and 1949), Lerner ("Factor prices and international trade," *Economica* 1952), MacDougall ("British and American Exports—a study suggested by the theory of comparative costs," *E.J.* 1951), Leontief ("Domestic production and foreign trade—the American capital position re-examined"—*Economia internazionale* 1954) and Diab ("The United States Capital position and the structure of its foreign trade") have made significant attempts at rigorous presentation and application of both the theorem and its corollary.

Professor Subimal Mukerjee, has presented in this publication under review a restatement and reappraisal of the Heckscher-Ohlin Law in the light of these recent contributions using sophisticated geometrical techniques developed in recent literature for analytical purposes. After discussing the main features of the Ricardian, opportunity cost and the Heckscher-Ohlin theories in Chapter I, Prof. Mukerjee has examined very rigorously the basic assumptions of the simplified Heckscher-Ohlin model in Chapter II. The last three Chapters are devoted to verification, elaboration and application of the theorem respectively.

After reading the whole book one is unfortunately confronted with a dilemma which we frequently come across in theoretical research: As Haberler observes, "If on the one hand, we base our analysis on more or less realistic assumptions, we have to be content with rather uncertain and at best approximate results. If, on the other hand, we are looking for unambiguous results we are forced to make highly specific, and, usually, not generally applicable assumptions, or, at any rate, assumptions that are difficult to prove." This dilemma

posed by Haberler in his characteristic way applies admirably to the theorem under consideration. However, in the literature not only in trade but in general economics as well propositions of this nature abound.

Although Prof. Mukerjee has not contributed anything new to the pure theory of international trade—nor does he profess to do so —the value of this publication lies in the fact that here for the first time most of the recent contributions which are confined still to technical periodicals have been brought together. The author deserves to be warmly congratulated on this laudable venture. The presentation is at once pedagogic and lucid and the analysis penetrating.

Bombay R. BHARADWAJ

The Dynamics of Supply: Estimate of Farmers' Response to Price. By MARC NERLOVE. (Baltimore: John Hopkins Press, 1958, pp. 268. Paper, $4.00; Cloth, $5.00).

NERLOVE'S study of agricultural supply in the United States is econometrics at its finest—by which is meant that the usual econometric tools complement, rather than replace, a knowledge of the institutional and biological factors of American agriculture. His primary conclusion, that the supply elasticities of corn (i.e., maize), cotton and wheat are considerably higher than previous estimates indicated, is useful to any analysis of present American policies in this area, but the book's real greatness lies in its methods far more than its conclusions.

The work is essentially mathematical, though not of the high-powered variety (seldom requiring more than differentiation and t-tests). Nevertheless there are two parts which may be of interest to the lay economist. Chapter 4, "The Data and Their Limitations," should be read by all Indians who, in their frustration, have come to think of the U.S.A. as a statistical paradise where all relevant series have been accurately collected since earliest time. Chapters 5-7 discuss the possibilities for substitution between the three crops and the way government restrictions affect substitutability. The value to the Indian economist consists in the different problems which a non-monsoon-oriented agriculture offers to supply analysis.

After reworking (well) the supply hypotheses of the Walras-Hicks general equilibrium system, and relating these to Marshallian supply curves, Nerlove moves to the central problem of his study: "that theory rarely deals with variables that can be observed." Thus there is the dichotomy between actual acreage devoted to a crop in a particular year (x_t) and the amount farmers would consider optimal (x_t^*)

if they could make all the necessary changes, and between the actual market price (p_t) and the "expected 'normal' price" which farmers use in determining optimal acreage (P_t^*). Nerlove makes three assumptions about the relationships of these variables: 1) that the long-run supply relation can be considered linear between x_t^* and P_t^* with an error term to cover neglected factors; 2) that farmers change their beliefs about "normal" prices by some positive fraction (β) of the amount by which actual prices differed from "normal" prices last year; and 3) that farmers are able, in a given year, to alter acreage only by some positive fraction (γ) of the amount they would like to change. In equations,

$$x_t^* = a_0 + a_1 P_t^* + u_t \tag{1}$$

$$P_t^* - P_{t-1}^* = \beta [P_{t-1} - P_{t-1}^*] \tag{2}$$

$$x_t - x_{t-1} = \gamma [x_t^* - x_{t-1}] \tag{3}$$

where a_0 and a_1 are long-run supply parameters and u_t a random error term. In this way, the variables of theory (x_t^* and P_t^*) are related to those of history (x_t and P_t); the statistical work may proceed in terms of the latter without committing the (usual) error of directly using equation (1) with the asterisks discarded. The 'a_1' which Nerlove seeks is much more truly a long-run, or "normal," relation between price and acreage.

At first Nerlove assumes γ equal to one and uses two reductions of equations (1) through (3):

$$x_t = a_0 + a_1 \beta P_{t-1} + a_1 \beta (1-\beta) P_{t-2} + \ldots + a_1 \beta (1-\beta)^{N-1} P_{t-N} + u \tag{4}$$

and

$$x_t = a_0 \beta + a_1 \beta P_{t-1} + (1-\beta) x_{t-1} + u_t - (1-\beta) u_{t-1} \tag{5}$$

Although (4) and (5) are merely different ways of writing the same thing, the estimates they yield of β and 'a_1' (and hence of elasticity) will differ because of the different assumptions about the residual terms—namely, in (4) that u_t and u_{t-1} are uncorrelated and in (5) that their correlation is (1-β). Since the estimates of β derived from (5) are consistently higher and of elasticity consistently lower (with one exception) than those derived from (4), this assumption about residuals is of no small importance. And since the Durbin-Watson statistics suggest that the autocorrelation assumption of (4) is too low and that of (5) too high, it is surprising that Nerlove has not tried another autocorrelation scheme, say of ·25 between u_t and u_{t-1}, if only for comparative purposes (since the β estimates in equation (5) are generally around ·50, the ·25 would provide a halfway assumption).

As long as β is less than unity, as common sense insists and statistical analysis verifies, the elasticities of acreage with respect to

"normal" price will be higher than those with respect to last year's price; generally they come out about twice as high but once a disturbing 25 times higher. The use of corn prices in the wheat supply function (what Nerlove calls a "semi-Marshallian" supply relation), and vice versa, improves correlations tremendously but at the cost of some confusing cross-elasticities.

Once γ is no longer pre-set at unity, the floodgates are opened. The very symmetry of equations (2) and (3) makes it impossible to distinguish, statistically, between β and γ; and procedures which neglect this difficulty give estimates of β (or γ) which are negative (not to mention large negative elasticities). The leading troublemaker is the necessity of including *both* x_{t-1} and x_{t-2} as independent variables; their high intercorrelation ballioons the standard errors of the estimates of their coefficients and hence makes unreliable the estimates of β (or γ) and elasticity.

Nerlove attempts to circumvent this inability to distinguish β from γ by adding a new variable to the "normal" supply relation (equation (1)), namely lagged corn acreage to both the wheat and corn equations. The intent is admirable but the choice of variable is unhappy. While the amount of corn still in the ground at the time of wheat planting will certainly affect *actual* wheat acreage. there is no reason why it should affect the "normal" or optimal acreage. Also, the not really so very simplifying assumption that β and γ are the same for corn and wheat imposes an unwarranted rigidity upon the equations. Thus it is no surprise when two estimates of, in effect, the same thing turn out one significantly different from zero and the other not. (Nerlove seems reticent to catalog some of the other horrors, such as imaginary estimates of β).

At this point it is time to quit and Nerlove wisely does so. He has urged the maximum of economic content from his 24 pieces of data (annual, 1910-1933)-elegantly and effectively. Since the Government has variously interfered with agricultural acreage over the last quarter century, this is perhaps the last word on supply functions of these crops that will emanate from the United States; but the word is good.

University of Bombay
Yale University

RICHARD C. PORTER

Fiscal Policy and Politics. By PAUL STRAYER. (New York: Harper and Brothers, 1958, pages x+305).

THE association of Economics with Politics is very intimate and long-standing. In recent years with the financial policies of governments

assuming onerous significance, this association had become the crucial factor affecting the welfare of the people. In a recent study, Prof. Paul J. Strayer of the Princeton University surveys the impact which fiscal policies had on the United States economy over the past three decades and analyses the manner in which political and administrative factors had influenced, shaped, and limited the scope of those policies.

The main theme of the author is to underline the limitations of the executive branch of the government in developing the degree of flexibiilty necessary to meet the changing conditions in the economy. Under the peculiar form of political democracy which prevails in the U.S.A. political and administrative framework is slow to change and is subject to many pressures and abuses. The hesitancy with which government embarked on expenditure and tax measures during the Great Depression and the post-war recessions and the unsatisfactory manner in which many of the schemes were executed do not reassure that a bureaucratic administration will rise befittingly to a new situation. "The cold logic of economics is often at a disadvantage when faced by the realities of politics." The author therefore, expresses anxiety about the ability of the administration to secure the sort of co-ordinated policies which would insure full employment and rise in productivity. "The danger of politicalisation of the economy at the cost of productivity remains one of the most serious threats to the preservation of those things that are good and in the best tradition of the United States." (p. 280).

That democratic governments function subject to certain delays and pressures, is generally accepted and often these are tolerated as unavoidable. But the real issue is whether the governmental machinery in the U.S.A. is so cumbersome and subject to such pressures that it is inflexible and irresponsive to the demand of changing economic conditions. According to Dalton, public authorities have grown steadily in efficiency, especially during the last few decades. Is the U.S.A. an exception to this general trend? If one were to infer on the basis of the experience of the latest recession (but the 1957-58 recession is not taken into account because the book was completed earlier), one has to concede that the built-in-stabilisers had prevented the recession from deepening and that massive government spending and an attack on business psychology were both stimulating factors. Therefore the criticism that the Congress and the administration have not acted with vigour, has lost much of its force at present.

The book has 14 chapters including the Introduction and a Summary at the end. The first six chapters are essentially historical and discuss in chronological order the prominent features of the financial policies initiated since the Great Depression. The following

chapter outlines the political and economic framework as it presently operates in the U.S.A. and gives a sort of analytical basis for assessing the effectiveness of the fiscal policies. The next four chapters deal with tax and expenditure policies and problems of stabilization. There is also a separate chapter to discuss state and local taxation in the context of the expansion of federal tax and expenditure measures. Thus the book covers an extensive field and the author has done well to deal with each topic lucidly and in non-technical language. Throughout the survey, the attempt is to describe and interpret policies and to indicate their implications. On reading through, one gets a wide sweep of the major issues. Being "a study in the field of political economy," the author does not employ many statistical tables or mathematical equations, the types which we come across in the studies on fiscal policy by Prof. Alvin Hansen and Bent Hansen. Perhaps their more liberal use at least at certain places —for example in discussing the Keynesian formula (p. 140) and in expressing opinions such as, "no nation raises as large a part of its total revenues from income taxes as the United States" (p. 253) etc.—would have brought precision and conviction to the readers.

While the author's diagnosis of the working of the political and administrative system must be considered as generally sound, some of his suggestions for reform do not appear equally acceptable. Few will disagree with the view that the trend towards the growth of government functions will be maintained in future and few will dispute that the rise in the political status of labour and agriculture has been a stabilising force in the economy. However the contention that the best person to direct the economic policies is the President is difficult to accept. Is it easier to develop an articulate public opinion which will strengthen the President than to modify the administrative set up so as to adopt progressive economic policies? This needs closer examination. "The fact remains that there is probably no more waste or inefficiency in government operations than there is in the typical big business. In fact, a strong case can be made suggesting that dollar for dollar, the public gets more from its tax dollar than it does from its dollar spent for the highly stylized products of industry" (p. 285). If this is so, can the administrative system be so formidable a barrier to flexible economic policies?

There are certain fundamental issues which the author's recommendation raises. Will it be in sound democratic tradition to make the President the all-powerful authority in economic matters? Even if he is made, can he be expected to be absolutely free from political pressures so long as he continues to be elected to office through the support of political parties? In the past enlightened Presidents have been largely instrumental in initiating progressive economic policies, but they had their limitations too. If an emergency as that of an

economic recession, is to be quickly and effectively met, it is not only necessary to mobilise public support to the policies which the President enunciates, but it seems equally important to have an administrative set up which is free from reactionary pressures and which can function with imagination and vigour.

In the final analysis it seems (at least to the reviewer) that though not over-enthusiastic the administration has shown sufficient realism and has undertaken measures to resusciate not only the U.S. economy but also the economies of other countries. The pessimistic note expressed by the author may not perhaps be shared by all. In spite of this disagreement the fact that the author has made an objective analysis of the intricacies of the administrative mechanism needs to be underlined. He deserves credit for focussing attention on the cross currents that influence and the practical difficulties which confront decisions on financial matters. It is only an expert with insight that can uncover the story correctly and Prof. Strayer has displayed unusual ability in exploring a rather mysterious and unfamiliar field.

Bombay V. T. MATHEWS

Training for Social Work (Third International Survey). (New York: United Nations, Department of Economic and Social Affairs, 1958).

THIS United Nations publication is the third in a series of publications prepared for the Social Commission, The Economic and Social Council of UNO. The aim of this comprehensive up-to-date survey is to promote regional seminars or conferences for the development of contents and techniques of social work training. Consequently, the study is sensitive to the latest trends in the changing function of social workers and attempts to meet the new challenges of a rapidly changing society. It specially emphasizes the role of social workers in community development, rural as well as urban, and deals at length with a variety of new functions social workers play, especially in European and American societies, despite social security provided by the State. Unfortunately, the survey does not touch upon the social work activities of all the UNO members nor does it enable the reader to get some idea of the training facilities as they obtain in different parts of the world. It is a general dscussion without specific reference to any particular area or region.

The main aim of training of social work according to the survey is "The three-fold aim of such courses should be to impart the necessary knowledge, to develope the skill in the practice of social work, and to keep students to incorporate the philosophy, attitude and self-understanding essential to their function as professional workers."

The training imparted is evaluated in terms of this objective and the need for field-work is strongly emphasized, both as an aid to social maturity of the student as well as to gain direct experience of solving social problems. There appears to be a deplorable dirth of adequate facilities for field-work in most Institutions of training for social work. The survey concludes that the main reasons why students fail to reach a standard in keeping with their potentialities are, because of inadequate teaching, overloaded curricula, insufficient opportunity for discussion and poor integration between theory and practice.

The report ends with very useful suggestions for further improvement, such as, proper selection of students, evaluation of their performance after completion of the course, and better co-ordination between training institutions and employment agencies. These measures are suggested both at national and international level taking into consideration scope for advanced training, planning for further expansion, and assessment of the adequacy or otherwise of the content and method of training imparted, with reference to the needs of the community.

Such periodic surveys are most useful to check, amend and improve upon the quality of training imparted, and the study under review will be indeed an asset to libraries which concentrate on social work in particular, and all those dealing with applied social sciences in general.

Bombay PERIN H. CABINETMAKER

The Aging of Populations and its Economic and Social Implications. (New York: United Nations, Department of Economic and Social Affairs, 1956, pp. 168. U.S. $1.75).

IT may be said that in spite of a long history, it was only in the period since the Second World War that the science of demography acquired an analytic core of techniques which forms the definitive methodology of the displine. Hitherto, there was the frequent complaint that demographers were preoccupied with refinement of measurements and with *ad hoc* explanations of their observations, to the neglect of 'analytic theory.' A major advance in the direction of analysis, which occurred even before the Second World War, was the elaboration of the concept of the 'stable population' by Alfred J. Lotka, and of measures of population growth related to this concept. Recent studies have, however, revealed serious limitations of such measures, but more recently new applications have been made of the concept so that it promises to be a highly useful analytical tool of demographers. In addition to this development, the United Nations Population Branch has attempted to bring together data on the international experience of fertility and

mortality[1] in the form of standard fertility patterns and model life-tables based on observed age and sex patterns of mortality, which promise to give demography that basis of empirical regularities on which to base a scientific development of the subject of demography.

One of the first fruits of this development of an analytic core of demography was a systematic method of population projections by age and sex. The experience obtained so far suggests that in spite of their inherent uncertainties, such population projections are a useful basis for all types of planning for economic and social development. The same developments also enable demographers to make a more direct contribution to the study of the interrelations of population, economic and social changes. The work under review is an excellent example of what can be done in this field. It studies the causes of changes in the age distribution of populations, arising from different levels and trends of fertility, mortality and migration, and goes on to study the economic and social consequences of change in the age distribution.

The book is a useful and timely one, insofar as the importance of the age distribution of populations is not very widely realised in countries where the main preoccupation is often with the total size of populations in relation to exploited or potential resources. The available data on the trends and differentials in the age structure of the population of a large number of countries at different levels of economic and social development is compactly presented. In interpreting the trends shown by such data, the distinction between individual aging and the aging of populations is well brought out. Further, the concept of the aging of populations is also carefully defined in the two senses of an increase in the proportion of aged persons and of a decrease in the proportions of young people. The two types of aging are quite distinct and new terms, aging 'at the apex' and 'from the base' of the age pyramid are suggested to distinguish between them. These distinctions are important, as a failure to observe them has given rise to some confusion, especially in attempts to study the effect of changes in mortality by comparing differnet life-table stationary populations. The method used in this work is based on the stable population concept and population projections. Using these methods, it is shown that the decline of mortality as it has occurred in the past has had little effect on the age structure, while the reduction of fertility in populations where it has occurred has led to aging both from the base and at the apex. It is therefore forecast that "in the underdeveloped countries, a phase of rejuvenation will be followed by a phase of heavy aging," as declines in mortality are followed by a decline of fertility.

1. See e.g., 'Age and Sex Patterns of Mortality', *United Nations Population Studies No.* 22, New York, 1955.

The report then goes on to study the economic and social implications of various trends in the age distribution. The topic specially discussed are participation in economic activity, consumption requirements and distribution of consumer goods. In studying the effect of aging on economic activity, the levels of participation rates in economic activity at different ages are based on the average experience of countries at three levels of economic development, namely industrialised, semi-developed and underdeveloped countries, as observed in censuses taken around 1950. Using these average rates, the relative size and age structure of the active populations and rates of entry and withdrawal from the active populations are studies in stable population models, and by way of example, the method is applied to study the components of variation in the active male population of Brazil, as projected under alternative assumptions up to 1980. Then the changes in consumption requirements and the burden imposed by such requirements on the active population are studied by expressing the needs of children and of aged persons approximately at 70% of those of adults. The analysis is carried out so as to separate the effects of changes in mortality and fertility. There is also a study of the distribution of workers into consumption goods industries, investment and replacement of capital goods, required to maintain growing populations with different age distributions. A study of the transition from one stable population to another illustrates nicely how the demographic situation constitutes a constraint on the planning process, which economists must contend with. Illustrative calculations show how to take account of different types of needs, such as foodstuffs, services, school needs, housing needs and health needs. There is an interesting discussion of the distribution of consumer goods within the family among adults, young and aged dependents, under different social systems in populations with different age compositions.

It is hoped that this short account of the book is sufficient to show its importance for those who wish to take account of the population factor in economic and social planning. It is true that the calculations in the book may not be directly applicable to any particular country, but the method of making such calculations is so well explained and illustrated that it should be a simple matter to make alternative assumptions and derive models more suitable to particular countries. In particular, the results have everywhere been presented with an eye to application to the underdeveloped countries. The presentation is always lucid and the book is to be strongly recommended to demographers interested in the economic and social consequences of demographic changes involving the age distribution and to economists interested in studying the constraints imposed by the demographic conditions on economic and social development.

Bombay

R. M. SUNDRUM

NOTES

Population Growth vs. *Economic Growth*

I

THE size of the labour force in a country at any point of time is determined primarily by the size of its population. The contribution of population to national product depends to some extent on its composition and quality, i.e., the proportion of the people in the working age group, say 15 to 60, but mostly on two factors external to population, namely, the land resources and capital resources available per worker. Capital resources are man-made. They are the combined product of natural resources and human resources. In a primitive economy having little or no capital resources, output per head of labour depends on the quantity and nature of land available for each worker. As population grows, land and natural resources are more and more fully worked and in that very process capital is being formed. Hence productivity will not be affected adversely, but may actually be increased if the loss in the amount of natural resources per worker resulting from growth of population is offset by the increasing availability of capital resources. It is therefore possible to conceive of a certain stage in the course of the development of a nation when the land-labour ratio is such as to facilitate the laying of a foundation for capital structure. Hence in an economy if natural resources get used up by a rapidly growing population but at the same time for some reason or other the opportunity for building up capital is missed, labour productivity should necessarily decline and capital accumulation becomes very difficult. Most of the developed and economically advanced countries of today are those that, as their population grew and the natural resources per head became less and less, were able to build up capital which, unlike land, is of an expanding nature and is therefore capable of taking care of an increasing population. And most of the underdeveloped countries are those which have missed this opportunity, so that in such countries the limited *per capita* availability of land is paralleled by the limited capital resources per head, with the result that their economies have got stagnated at a very low level of development. The crux of the problem thus appears to be the constancy of the factor land, which means that in the absence of a proportionate increase in capital, the productivity of labour must fall steadily—the faster is the rate of growth of population the more rapid will be the decline in *per capita* output, and the more difficult becomes capital accumulation.

II

It is true that in recent years a few countries like Argentina, Australia, Canada and the Union of South Africa have developed rapidly because of the growth of population.[1] Among underdeveloped countries, Brazil, Burma and the Gold Coast in Africa are sparsely populated, but they have abundant natural resources and their growth potential is great. Population per square mile is 17 in Brazil, 49 in the Gold Coast and 73 in Burma. Increase in numbers in these countries is likely to produce certain advantageous results made much of by writers like Sauvy, Toynbee and Dupreel, such as better organization and technological advancement, social mobility, greater frequency of personal contacts, intellectual stimuli and changes in values conducive to material advancement. But even here, while increase in population is on the whole beneficial, differences in the rate of growth of population are likely to have an effect on the rate of growth of the economy. At present, population in the Gold Coast and Burma is estimated to increase at the rate of 1.5% and 1.2% per annum respectively, whereas in Brazil it is between 2.2% and 2.6%, so that despite her vast natural resources, it appears that in the last mentioned country, the rate of economic advancement would have been greater still had population increased less rapidly.[2]

But most of the underdeveloped countries of the world have not only an excess of population but are also experiencing a rise in the rate of increase in numbers. Many of these countries have recently emerged from a colonial status and have awakened to the need for quickly building up their economies. They are aware of their potentialities and are proceeding ahead with ambitious schemes of planned economic development. But precisely at this eventful time of their economic history there has been a significant uptrend in population which threatens to be a formidable drag on their attempts at expansion. The more important countries falling in this category are Egypt with a population density per square mile of 1500, Java with 1009, India with 293 and China with 156. The annual percentage rate of increase is about 2 or exceeds 2 in these countries. The cause of this significant rise in the growth of population is well-known—the rapid fall in death rate against a constant or even increasing birth rate. The phenomenal decline in death rate in many of the underdeveloped countries of the world in recent years has been attributed to the application of modern medical and sanitary knowledge at a very low cost to control some widespread diseases on a mass basis. In the decade 1940-50 death rate declined in Puerto Rico by 46%, in Formosa by 43% and in Jamaica by 23%. In the same period in Ceylon death

[1] *Processes and Problems of Industrialization in Underdeveloped Countries* (U.N. 1953), pp. 15-18.

[2] *World Population and Resources* (PEP, 1955), pp. 141-148.

rate per 1000 a year declined from 21.0 to 12.6. Thus in a remarkably short time of 2 or 3 years the death rate in this country fell to the low levels attained in Western countries. But since birth rate has not shown any signs of decline, the annual rate of growth of population has gone up so high as 2.7%. In many of the countries which have experienced this change, the position is more or less the same as in Ceylon. It appears that this lag between birth and death rates will continue for some time, so that it is not possible to expect any notable fall in the rate of population increase in the immediate future unless there is some significant change in the socio-economic conditions in these areas. What is important to remember in this connection is that their trend in population in most of the underdeveloped countries has been due fundamentally to the fact that, while these countries benefited much and quickly from the adoption of death control techniques, they have not experienced any change in their cultural patterns or social conditions which would help in restricting the growth in numbers or size of the families.[3]

While the density of population per square mile and its annual growth rate are high in the majority of underdeveloped countries, yet they are not so high as in some of the advanced countries of today. The density per square mile is 609 in Japan, 539 in the United Kingdom, 405 in Italy and 307 in Switzerland. The natural annual rate of increase exceeds 1.6% in the U.S.A. and is nearly 2% in Canada. But it should not be forgotten that there is a great difference in the position of these two groups of countries. In both, growing population has obviously meant a decline in *per capita* extent of land available. Thus in India area of cultivated land *per capita* steadily declined from 1.11 acres in 1921 to 1.04 in 1931 and 0.84 in 1951.[4] But while in the developed countries the decline in the area of cultivated land per head of the population has been more than offset by an increase in the amount of capital, a similar shift in labour-resources ratio has not occurred in the underdeveloped areas of the world. This constitutes the major source of trouble in their attempts at development.

Moreover, there is no comparison between the economic conditions and the demographic situation in the underdeveloped countries of today with that prevailing in the developed countries at a corresponding stage in their economic evolution in the past. The decline in death rate that has taken place in recent years in some of the underdeveloped countries is much greater than what it was in the early 20th century in the present advanced countries. In the latter the decline was steady and gradual, extending over decades and

[3] "The amazing decline of mortality in underdeveloped areas" by Kingsley Davis (*American Economic Review—Papers and Proceedings*, May 1956, p. 314.)

[4] *Census of India*, 1951, Vol. I, Part I-A, Report, pp. 141.

resulting directly from advancement in science. In the former, death control techniques have been imported fully developed as it were, and made cheap and available even to the poorest through government and international agencies. On the other hand, the birth rate in the European countries in their pre-industrial stage was not so high as it is in some of the countries in Asia, North Africa and Latin America. While in the latter group of countries birth rate ranges from 40 to 60 per 1000, the highest rate recorded in the 18th century in some of the countries of North-West Europe was less than 40 per 1000. Furthermore, the pressure of population on land was less in some of the European countries. India in 1950 had 293 people per square mile ; France and England had 105 and 115 at the end of the 18th century. Besides, while in the 18th and 19th centuries the problem of excess population could be solved easily in European countries by emigration, such possibilities are not available now for the overpopulated underdeveloped countries.

III

Broadly speaking, the contribution of a growing population to economic growth consists in what it adds to production minus what it takes away from the national product in the form of consumption. While consumption depends mostly on the mere size of population, production depends on the size of population in relation to the complementary factors—land and capital. In the situation in which underdeveloped countries find themselves today, capital accumulation is of vital importance not only for economic growth but is necessary even for maintaining the existing low standards of life. This conclusion emerges directly from the fact that most of these countries have to face the double evil of a dense population already excessive, and on the top of it, a large addition made every year. If capital-output ratio is 4:1,[5] and population is increasing at the rate of 2% per year, an investment of 8% of the national income is required even to maintain the existing standards of consumption. If the growth of population is at the rate of 3% per year, which is common in some of the countries of this category, the demographic rate of investment should itself be 12%, which is hardly attained in such countries. The economic investment should then be obviously much higher.

[5] The capital-output ratio in respect of agriculture is lower than in industries. It follows then that the capital-output ratio in countries which are predominatly agricultural should be lower. But in countries like India where large investments are made both in the agricultural and industrial sectors and where investment takes the form of irrigation works, canals, multi-purpose projects, roads, railways and other social overheads, the ratio is bound to be very much higher. Hence the ratio 4 : 1 cannot be considered as too high.

From the point of view of economic development, a large population combined with a high rate of increase is much of an obstacle for the following reasons:—

(1) The age composition of the population is such as to create a proportionately heavier dependency load in economically backward countries than in the advanced ones. The dependency load is calculated with reference to the contribution to production of a population as compared with its consumption. Thus if we count the consumption needs of an adult of productive age as one, that of a child as one-third and an aged person as one-half, we find that in an underdeveloped country the population of which on the average is composed of 42% children, 3% aged and 55% adults of productive age, there is a ratio of 128 consumer equivalents per hundred adults of productive age. In an advanced country where the age composition is more favourable to production (23% children, 67% adults and 10% aged), the corresponding ratio is 119 per hundred.[6] It has been calculated that for every 1000 self-supporting and gainfully occupied persons, the number aged 14 and less is 1317 in India, 702 in the U.S.A. and 496 in Great Britain.[7] The fact that even people of working age are less fully employed in India than in the developed countries adds to the burden. The combined effect of a larger proportion of children to adults and the existence of under-employment more than offsets the fact that the proportion of the people in the highest age group, 65 and above, (who are also dependents) is greater in advanced than in underdeveloped countries. It appears that there is a progressive worsening of the situation in this respect. In the East Asian underdeveloped countries there has been a tendency for the average age of the population to decline, which means that the proportion of population in the working age group will decrease. The increase in labour supply will therefore be slower than increase in population or, in other words, consumption would rise faster than production.

(2) Economic growth can be promoted by restricting consumption and increasing the resources available for capital formation; but from what has been stated above it may be seen that a large part of the resources of underdeveloped countries is diverted from the formation of capital to the formation of population. As population increases, the need for capital equipment calls for more and more resources being utilized for this purpose, but since the resources remaining above consumption decline proportionately, the increment that can be made to *per capita* capital equipment becomes necessarily less than what it would be in the absence of population growth. Since consumption requirements are so great in underdeveloped countries

[6] *Determinants and Consequences of Population Trends* (United Nations, 1953 p. 265 fn.

[7] *Census of India*, 1951, Vol. I, Part I-A, p. 119.

and at the same time labour productivity is low, a larger proportion of the population is devoted to the production of food and agricultural commodities than in advanced economies. But then, the very fact that a large part of the material and labour resources of a country is devoted to the production of food and other agricultural products indicates that the economy can support proportionately a smaller population than another where a larger proportion of the income is spent on non-food and non-agricultural goods.

(3) The fact that the proportion of the people below 15 is greater in underdeveloped countries than in countries like U.K. or U.S.A. together with high rate of mortality in this age group causes a serious wastage in the economy. It has been estimated that the cost of maintaining children who die before the age of 15 is 22.5% of the national income in India as compared with 6.5% in U.K.[8] The dependency load represented by the large proportion of children is sought to be relieved by employing them at an early age and making them contribute what little they can to the family income. As a result there is under-employment in the economy as a whole and lower *per capita* output. A more serious social and economic consequence following from this fact is that the premature employment of young persons by denying them opportunities to build up their mental and physical equipment amounts to wasteful exploitation of the oncoming generation of workers. "The position is rather like that of peasants compelled by hunger to harvest their wheat every year before it has ripened."[9]

(4) Lastly, the low standard of health, lack of mobility of labour and the scarcity of technical skill reduce the level of efficiency, keep down productivity and make the economic contribution of the total labour force much less than what limitations in capital equipment per worker would alone warrant. Hence the paradoxical situation of scarcity of labour that quite often arises in thickly populated underdeveloped countries.

All these findings can be reduced to the simple proposition that in countries like India which are underdeveloped and where population pressure is great and the rate of increase in population relatively high, the real solution can be found only in increasing capital stock so as to make a larger amount of capital resources available per head of the population. But while increase in numbers necessitates the acquisition of larger amount of capital, the very fact of rapid growth in population makes capital accumulation more difficult.

[8] D. Ghosh : *Pressure of Population and Economic Efficiency in India*, 1946.

[9] *Determinats and Consequences of Population Trends* (United Nations, 1953), p. 265.

IV

Such a diagnosis of the situation leads logically to two possible means of getting out of this difficulty. Either capital growth is to be accelerated or population growth is to be decelerated. There is one school of thought which firmly believes in the first as the surest means of achieving the end of rapid economic development. Professor H. Leibenstein has argued[10] that underdeveloped countries where *per capita* income is low and population growth rate is constant because of high birth and high death rates are in a "Malthusian equilibrium position" based on a subsistence structure. Displacement from this equilibrium is possible by securing an initial *per capita* income gain through the importation of large amount of foreign capital, or technological innovations of migration of labour out of the country. This initial income gain sets into motion two forces—an annual increase in total income through rise in the level of investment and a rise in the rate of population growth. As a result of the latter trend, *per capita* income does not rise to the extent that it otherwise would. It is however stressed—and this is the crux of the whole theory—that if the *per capita* income rises sufficiently high, that itself would bring down the rate of growth of population so that after a certain stage is reached, further increase in investment and *per capita* income becomes easier. The time that would be taken for this stage to be reached depends on (a) the magnitude of the initial income gain which displaces the equilibrium, (b) the initial capital-labour situation—i.e. their relative magnitudes, and (c) the rate at which population is growing. It follows then that the larger the initial income gain and the slower the rate of growth of population, the more quickly would the point be attained after which further growth becomes easier. Hence in underdeveloped countries faced with the problem of overpopulation, economic development is possible only if a very strenuous effort is made in the initial period to start large income generating investment schemes. Such a strenuous effort however is twice blessed, in that it helps to reduce the rate of growth of population itself and also makes further development easier. Leibenstein conceives of a critical minimum in respect of this initial income gain. If the effort falls below this level, economic growth is not only not possible but becomes actually more difficult because of increasing population so that the economy would find itself further behind the position from which it started. Given the population growth rate, the critical minimum effort in the form of investment should therefore be of such an order as to break the population barrier to economic expansion.[11]

[10] H. Leibenstein : *A Theory of Economic-Demographic Development* (1954).

[11] W. Galenson and H. Leibenstein : "Investment Criteria, Productivity and Economic Development" (*Quarterly Journal of Economics*, August 1955, pp. 343-370.

This explanation appears to be sound in theory, but it has only limited practical significance. Let us examine what its practical implications are. It should be remembered that in the absence of foreign capital, emigration and technological innovations, the initial rise in income can be obtained only by lowering consumption and by increasing domestic savings and investment via the multiplier. The problem then boils down to making a much larger investment out of current domestic resources. We have in particular to find out, on the basis of our knowledge relating to population and its rate of growth, capital stock, income and the rate of savings and investment, the extent to which the last mentioned factor should increase in order to bring about a much higher rate of increase in *per capita* income. This can be done on the basis of the production functions of the important factors of production. The figures made use of in this connection by economists like Paul Douglas and Tinbergen relate to industrialized countries.[12] For India the co-efficients for labour obtained by different writers range from 0.40 to 0.77 and those for capital from 0.23 to 0.60. In a recent study of this kind made by the Secretariat of the United Nations Economic Commission for Asia and the Far East relating to underdeveloped areas of this region, the figures 0.7 and 0.3 are made use of for labour and capital respectively.[13] According to this calculation, if population is assumed to increase at the rate of 1.5% per year, employment is 30% of the population and savings and investment are 7% of the national income, total income increases by only 78% in 30 years and *per capita* income by 14%. This obviously is very low. On the other hand, if we assume that income growth would have any perceptible effect on population growth only when the *per capita* income in a country like ours is doubled, and that it is desirable to bring about this effect in a shorter period than 30 years, say in 20 years, then it is clear that a much greater investment effort than indicated in the above illustration is necessary. If to this is added the consideration that the assumed population growth rate and the capital output ratio are most likely to be underestimates, the required investment proportion becomes higher still. It does not appear possible to reach such high targets of savings and investment in a country like India, where the consumption level is very low and where, in spite of considerable attempts at raising the tax revenues in the last few years, there has not been any great improvement. Attempts at further reducing consumption are bound to react adversely on the already low level of labour efficiency.

[12] Paul Douglas arrived at the figures 0.75 and 0.25 as representing the elasticity of production of labour and capital on the basis of the performance of manufacturing industries in the United States in the years 1799-1922. (*The Theory of Wages*, 1934, pp. 124-129, 155-158). Tinbergen give the following figures : 0.7 for labour, 0.2 for capital and 0.1 for land. (*The Dynamics of Business Cycles*, 1950, pp. 122-123).

[13] *Economic Bulletin for Asia and the Far East* (U.N.), June 1958, pp. 17-31.

Further, the theory assumes that the rate of growth of population would come down if *per capita* income rises fast enough. Leibenstein himself gives the examples of Western countries and Japan where decline in the rate of increase in population has synchronised with an acceleration in economic growth. The implication here is that a mere rise in incomes has a direct bearing on population trends. What is more, it assumes that a moderate rise in incomes increases the rate of growth of population (in conformity with the Malthusian assumption), but a rise in income which is above a certain level brings it down. But in actual fact, the population problem in a country like India is not a simple problem of arithmetic, but an intricate social one influenced by custom and tradition and the social attitudes and prejudices of the people. As such, changes in social attitudes and cultural patterns will have a more direct bearing on population trends than mere increase in incomes. The sudden drop in the rate of growth of population in Japan in recent years has been due largely to the permissive legislation in respect of birth control and not to economic growth. Improvement in economic conditions may create social attitudes favourable to family restriction, but this need not necessarily happen. Rate of growth of population in urban areas is lower than in villages not because income is higher but because the social conditions are different. Rise in the income of a family living in a village is likely to lead to increase in numbers than to any restriction in the expansion of the size of the family. The Indian Census data of 1951 show that in the Southern zone, which is not economically the most advanced part of the country, the age of marriage is higher and the birth rate is lower than in any other region in the country.[14] It would thus appear that the desired end can be reached more easily by concentrating on the social front than on the economic front. The theory of population control *via* economic development does a positive harm in so far as it tends to distract attention from the easier and more feasible method.

This, however, does not mean that economic development can be neglected. What is stressed here is that by educating the people and by effecting a favourable change in their attitudes through well planned propaganda, it would be possible to bring down population growth rate considerably. It is idle to wait for economic development to do the trick. If by such measures a new sense of values is created among the people and they are enabled to develop a materialistic attitude towards life instead of being other worldly, it is

[14] The percentage of females aged 15 and over who remain unmarried is 10.1 in the south against 6.5 in West India and 4 in North and Central India. There is a corresponding difference in respect of males. Birth rate in South India is 36 or 37 per thousand per year compared with 42 in West India and 44 in Central India. On the other hand, death rate in the South is 21 or 22 per thousand, while in Central India it is 34, East India 26 to 28 and West India 26. (*Census of India*, 1951, Vol. I, Part I-A, Ch. 11).

quite possible that the birth rate would start declining rapidly and in as spectacular a manner as death rate in recent years has gone down. Here it is worth pointing out that the major factors responsible for this decline in death rate new drugs and other medical means--are fast reaching the end of their possibilities so that the extent to which death rate would further fall on account of these techniques becomes less and less. This would mean that even a small gain in the way of controlling birth rates would have a proportionately larger effect on the natural rate of increase of population. Undoubtedly this would involve a huge responsibility on the State and necessitate large expenditure. But the steps taken in this line in Japan and China recently contain a lesson for us and show us the possibilities of this programme of action.

V

But measures to reduce birth rate cannot solve the immediate problem that confronts a country like India, namely, the problem of generating the forces of economic development in the context of excess population and scarcity of capital. There is a depressing parallelism (depressing from the point of view of underdeveloped countries) between advanced countries which are beset with the problem of over-expansion or under-utilization of capital and the underdeveloped countries which are tormented with the problem of population growth outrunning capital growth. Under-utilization of capital which threatens to land the developed economies into stagnation is sought to be met by the creation of money incomes sufficient to produce that order of effective demand which would keep capital fully employed. In underdeveloped economies unemployment and under-emplomyent of labour are due to inadequacy of capital as well as income. But both capital and income are the result of employment of labour. Hence the vicious circle. This vicious circle can be broken only if labour is made to create an excess income with techniques and capital supply as they are. Herein lies the importance of finding out ways not merely of increasing the employment of labour, but what is of greater significance, increasing the *per capita* yield of labour. The crucial question is therefore whether we are making the best use of the labour resources. It may be argued that full and efficient employment of labour is not possible because of the inadequacy of complementary factors. But if complementary factors themselves are dependent on labour productivity, there is no way out, short of importing capital, except to increase labour productivity with the existing equipment. It is by finding out this means that the forces of sustained growth can be generated in the economy.

The immediate need therefore in our country is to make better use of the factor labour even with the existing capital stock. To the extent that there is shortage of technically skilled labour and shortage

in particular regions of the country, better employment of labour can be secured by training and by improving mobility of labour. Capital resources which remain wherever and to whatever extent unutilized are again a potential source of employment. Thus, if large irrigation works are not made use of fully because of lack of supplementary works like canals, it is necessary to take up the latter and complete them with the help of labour mostly. There is ample scope for increasing the productivity of labour by improving the efficiency of labourers and by creating a greater zest for work. This is possible of achievement through the offering of proper incentives. Also, attention is to be devoted to the organization side of labour. Such measures would increase incomes without involving any great additional investment. This is therefore mostly a net addition to national income and it is up to the State to mobilize it and utilize it for investment purposes.

Madras D. BRIGHT SINGH

A Note on Hirschman's Concept and Strategy of Development.

WHAT are the causes, or if you like, what is *the* cause, for the ills that the underdeveloped countries suffer from? We have, to date, not a few suggested answers to this question. But the quest to find *the* answer, like the quest for knowledge, seems unending: at least, there is no end in sight yet. Hirschman is among the latest to join the bandwagon. His strategy—prescription—for underdeveloped countries is original at least in its flavour; and some of his policy-conclusions are even startling. His diagnosis is also original in its forcefulness, though not so much in its essence. His reasoning is succinct and to the point; his style is lucid and provoking. For all these reasons, the approach of his book *The Strategy of Economic Development* is likely to arouse more than ordinary interest.

I

First, let us acquaint ourselves with Hirschman's concept of economic development. "Development presumably means the process of *change* of one type of economy *into* some other more advanced type." (p. 51-2). (Italics in the original). Hirschman compares the process of development to the process of learning a foreign language; the "Berlitz Model" (p. 47) of Simon is applicable to economic development. At a point of time, an economy enjoys a certain (low) level of development. When development effort is undertaken, it progresses at a certain (not necessarily constant) rate. As the economy develops, there are certain factors that promote or encourage the development effort, and certain others that retard or discourage it. Once the economy reaches a certain (high) level of development, it

is out of the woods, and the growth promoting factors win the race. But, before that level is reached, the outcome is uncertain, so that the development effort may prove futile. The relative strength of the growth-promoting and the growth-retarding factors—to use Leibenstein's terms—depend on (i) the prevailing level of development, and (ii) the rate at which the development effort takes place. The higher the level of development, the more powerful are the growth-promoting factors; and, the higher the rate at which development is attempted, at a given level of development, the more powerful are the growth-retarding factors, which *can*, nevertheless, be overcome.

Hirschman rejects the various "scarce factor" theories of economic development; (though his own theory may as well be considered as another "scarce factor" theory!) According to him, in an underdeveloped economy, no factor of production is 'scarce.' It is there, but it is hidden like disguised unemployment. "Development depends not so much on finding optimal combinations for given resources and factors of production as on calling forth and enlisting for development purposes resources and abilities that are hidden, scattered or badly utilised." (p. 5). Thus, the situation of "underdevelopment" is analogous to that of "underemployment": the difference is that in the latter situation, the factors are *openly* idle, and the remedy lies in *recombining* them; while in the "underdevelopment" situation, the factors are hiddenly idle, and have to be *combined*. The deficiency in the underdeveloped countries is with the *combining process*, or "binding agent." Hirschman's diagnosis is that "countries fail to take advantage of their development potential, because they find it difficult to take the decisions needed for development in the required number and at the required speed." (p. 25).

II

This is the basic assumption—the diagnosis; what about the prescription? Since insufficient number of development decisions (deficiency of the *ability to invest*) is the cause of backwardness, the remedy lies in "generating and energizing human action in a certain direction." Hirschman's formulation of the development problem "calls particular attention to the fact that the use of different economic resources has very different repercussions of 'feedback' effects on the available stocks of these resources." (p. 7). The ability to make and carry out investment decisions—the *ability to invest*—is a function of the size of the modern sector: it is acquired and increased by practice. The ability to take development decisions is a scarce factor; but we cannot "economize" the use of that factor, by varying the proportion in which it is used with other factors of production. Every project has its decision; so we have, here, a case of constant ratio of a particular input, relative to all the other

inputs put together. "Being unable to dilute it, we must call forth as much decision-making ability as possible by maximizing induced or routinized decision-making." (p. 27-8).

How is this to be done? That—the search for effective development inducing mechanisms or the *inducement mechanisms*—is the theme of the major part of the book. First, let us see the "investment-promoting" character of investment: the complementarity effect or "induced" investment. "Complementarity means that increased production of A will lead to *pressure* for increasing the available supply of B." (p. 69). (Italics in the original). Investments of one period call forth complementary investments in the next period; they compel certain additional investment-decisions. These decisions are comparatively "easy-to-take," routinized, as opposed to the "genuine" economic decisions. These "easy" decisions attract newcomers. "The complementarity effect of investment is therefore the essential mechanism by which new energies are channeled toward the development process. ... To give maximum play to this effect must, therefore, be a primary objective of development policy." (p. 43). The investment policy must be designed to increase the "stimuli and pressures toward additional capital formation that might emanate from the investments of a given period."

The investment-promoting (through complementarities and external economies) character of investment is an "invaluable aid" to economic development. It compels a crop of investment-decisions, and relaxes the constraint imposed by the scarce factor, the ability to take new decisions. For Hirschman, the test of an investment project is the manner in which it affects the availability of this scarce resource.

III

A sequence of disequilibria, one leading to another, is a favourable situation for economic development. In fact, the idea of *inducement mechanisms*, resulting from disequilibria and pressures is pursued throughout the book. It is the basis for the determination of the *Efficient Sequence* (in the case of the *postponement* type of investment decisions). It is also the basis for the preference of development via shortage of SOC (Social Overhead Capital) to development via excess capacity of SOC. Excess SOC capacity is essentially permissive; it invites rather than compels additional investment. Shortage of SOC capacity, on the other hand, leads to attempts to rectify it by those who gain from this rectification.

Maximizing induced investment-decisions is still the objective in view, when considering investment in the DPA (Directly Productive Activities) sector. According to Hirschman, there are two inducement mechanisms in the DPA sector :

(i) Backward Linkage Effects or the input-provision: A non-primary activity will set into motion processes attempting to supply from within the sector of domestic production, the inputs needed in that activity. These are the result of the pressure of demand.

(ii) Forward Linkage Effects or the output-utilization: If an activity does not by its nature cater exclusively to final demands, it will induce attempts to utilise its outputs as inputs in some new activities.

Investment decisions that take into account these linkage effects should be favoured, as they induce more investment. Development policy, in the process of project selection, should take into account the linkage effects. Backward Linkage Effects are neater and more powerful (because they are more compelling) than Forward Linkage Effects. "... much of the recent economic history of some rapidly developing underdeveloped countries can be written in terms of industrialization working its way backward from the 'final touches' stage to domestic production of intermediate, and finally to that of basic, industrial materials." (p. 112).

IV

What conclusions regarding investment policy follow from Hirschman's analysis ? Starting with the assumption that the *ability to invest* is deficient in underdeveloped countries, and the corollary that development policy should maximize induced investment decisions, Hirschman reaches the following conclusions regarding investment policy:

(i) He "heartily disagrees" with the balanced growth doctrine; its application requires a large amount of that factor which he assumes to be in short supply in underdeveloped countries. The advantage of unbalanced growth is that it leaves considerable scope to induced investment decisions, and, therefore, the principal scarce resource. "genuine" decision-making, is put to the most "optimal" use.

(ii) Subject to the floor laid down by technological factors (which lay down a minimum amount of SOC investment as a prerequisite to a given level of DPA investment), investment in the DPA sector is preferred.

(iii) Within the DPA sector, projects with large linkage effects are to be preferred. "Investment decisions that are taken as a result of both backward and forward linkage are caught, as it were, in a pincer movement and must be prized by us since they are sure to be particularly easy-to-take ones.... This kind of *pincer cum-feedback* effect can only be obtained with the help of industries that,

in the triangularized matrix of inter-industry transactions, are located at some distance from the top rows. This means intermediate or 'basic' industries...." (p. 117-8). (Italics in the original).

(iv) Investment in new product industries is preferred to duplicating lines of production that are already carried on. This is likely to mean investment in highly capital-investment industries.

(v) Investment in large-scale ventures and in "show pieces" is preferred because they are likely to be more carefully planned.

(vi) Investment in activities that *must* be (compulsive) maintained in top working order, in activities that *must* observe high quality standards for their output, in machine-paced operations, and in process-centred industries is to be preferred.

V

Hirschman applies his main thesis, about the role of inducement mechanisms, consistently and even relentlessly throughout. And the search for inducement mechanisms does not end with the examination of investment policy. Indeed, one of the most powerful inducement mechanisms, Hirschman argues, is to be found in imports. "One of the real difficulties of development is lack of knowledge of, and uncertainty about, the market.... imports still provide the safest, most incontrovertible proof that the market is there." (p. 120, 121). The Backward Linkage Effects of imports are very powerful indeed. The larger the volume of imports (into a developing country) of a particular commodity, and the more rapidly expanding it is, the less likely it is that it will continue for long to be an imported commodity; for this will mean that the *domestic production threshold* (i.e., the minimum economic size at which a domestic firm can produce profitably and can compete successfully with the imported commodity) is being more rapidly approached. The importance given to imports as an inducement mechanism is so great that some interference, on that ground, with the consumption-pattern is also deemed justifiable.

The other external inducement mechanism is foreign capital. It brings with it other factors that are scarce, notably, investment decision-making. It helps the country to take the path of unbalanced growth; it acts as a stopgap, in relieving the country of the pressures that arise in the initial stages of the (unbalanced) growth sequence; finally, the imports that it makes possible are important links in the process of development.

VI

The search for inducement mechanisms is so thorough that Hirschman considers the development-inducing properties even of

"disturbances": inflation, balance-of-payments pressures and population pressures.

Inflation: Rises in individual prices are a signal in the development process, and have the function of calling forth investments and increased output. These may or may not lead to general inflation depending on the efficacy of monetary and fiscal policy. It is better not to have a general inflation and still have the successful 'signalling' function of individual price rises; but a general inflation is 'not all bad,' if investment is undertaken in the signalled sectors.

Balance-of-Payments Pressures: These also are a "part and parcel" of the process of development. They enable the country to overcome the resistances against the production of import-substituting commodities. The force of these resistances is weakened and the incentives to start domestic production become strong when balance-of-payments difficulties appear. Hirschman thus takes an "optimistic" view of the balance-of-payments difficulties facing an underdeveloped country.

Population pressures: Although "clumsy and cruel" and not a very attractive one, for Hirschman, "population pressures still qualify as an inducement mechanism." Their inducement stimuli lie in the fact that "the basic determinant of development, which we have called the 'ability to invest' is decisively enhanced in the course of the struggle to accommodate more people."

VII

The role assigned to pressures and inducement mechanisms in the theory is thus central and dominant. However, is it not possible—indeed likely—that the prescription of unbalanced growth (through disequilibria and inducement mechanisms), might in the process—before the "inducement" effects fructify—break down and cause inflation? Hirschman is not unaware of this possibility. In the discussion of the role of foreign capital, he does concede that if foreign capital is not forthcoming, "the unresolved pressures might do more harm than good by causing inflation and possibly by bringing the original "unbalancing" ventures to grief.... I cannot help feeling a little uneasy about the importance and creative virtue that I have bestowed on pressures, tensions and disequilibrium." (p. 207, 208). Still, "for a number of reasons," (not so overwhelming), "we do not think it feasible or even desirable to suppress these tensions."

About the basic assumption regarding the scarcity of the *ability to invest*, it can be argued that like other factors, this *ability* is also hidden. Indeed, Hirschman, at one stage, agrees with this: "....it has been convincingly shown that entrepreneurial ability as such is

not usually lacking in underdeveloped countries, but that, because of a foreshortened time-horizon and insufficient knowledge and experience, it is often deflected from the promotion of industry to other more familiar pursuits in trade and real estate." (p. 3). Thus, all the factors of production are present (although some are hidden) in the system; and it needs disequilibria, tensions and pressures to combine these factors quickly and effectively for development purposes.

It may further be asked: how much weight does the assumption of the scarcity of the *ability to invest* carry, with the Government as an important decision-taking unit? Hirschman will, of course, argue: "A task that private enterprise or market forces are unable to handle does not *ipso facto* become ideally suited to performance by public authorities." (p. 40). But, Hirschman nowhere says that decision-taking is beyond the capacity of the private entrepreneurs or public authorities. It is difficult to see how it is impossible for the government to take "the required number" of decisions and "at the required speed." A casual empiricism is enough for one to state that modern governments in underdeveloped areas have, in fact, been taking a large number of investment decisions, affecting a significant percentage of the national income.

Hirschman himself when he discusses the functions of government, in the final chapter of the book, says that they (government) "must initiate growth through forward thrusts that are meant to create incentives and pressures for further action; and then they must stand ready to react to, and to alleviate, these pressures in a variety of areas.... We have argued that in underdeveloped countries purely permissive sequences may be ineffective in inducing growth; and that in some cases the government may well have to take the first step in the more compulsive sequences that may be indicated, for example through active leadership in industrialization." (p. 202, 203).

It might be argued that the decisions of the modern governments are not of the *right* type—that they do not conform to Hirschman's criteria. While this may be the case, Hirschman's diagnosis is simply that "development is held back primarily by the difficulties of channelling *existing* or potentially existing savings into available productive investment opportunities, i.e., by a shortage of the ability to make and carry out development decisions." (p. 36). (Italics in the original). So the basic assumption of the thesis that an expanding *ability to invest* is a necessary and sufficient condition for development is not likely to go unchallenged.

Even granting the basic assumption, one may ask: what is the deficiency of the *ability to invest* due to? We have a clue in Hirschman's discussion of the role of imports: "One of the real difficulties of development is lack of knowledge of, and uncertainty

about the market." (p. 120). In other words, all the factors of production are present (overtly or disguisedly);[1] and what holds back development is, merely the lack of market or demand, from the point of view of the entrepreneurs. So the criticism of the Balanced Growth doctrine by Hirschman is, in fact, applicable to his own theory. The theory is an "application to underdevelopment of a therapy originally devised for an underemployment situation."

Further, the analysis is at some stages carried on with more enthusiasm than is justified. Not even once in the whole analysis, does Hirschman consider the availability of (specific) real resources, for a particular project or industry. For example, in the selection of projects, Hirschman lays emphasis on the linkage effects; now, if the raw materials (natural resources) necessary for a particular induced (induced by the originally selected project) project are not available in the country, the linkage effects cannot work beyond that stage. The inducement mechanism, in order to fructify, assumes the availability (hidden or otherwise) of the required resources; and not all of these can be imported. This is likely to be true of at least some natural resources. We do not find even a mention of this, in the whole book. Typical of this, are his remarks about the "creative" effects of imports: ".... If a country does not produce commodities A and B, and if it is importing A in more rapidly increasing volume than B, then it is likely to undertake domestic production of A long before that of B...." (p. 122). The availability of the requisite skills and (specific) resources is ignored altogether.

What can be said about Hirschman's theory as a whole? A theory is to be judged by its assumptions, argument or logic, and the policy-conclusions. The assumptions must not only be relevant but also realistic. On this score, as I have attempted to show above, Hirschman's theory is to be judged 'not satisfactory.' Once, however, his main assumption—about the *ability to invest*—is granted, his analysis and policy-conclusions following therefrom, are very logical and neat.

Bombay K. H. THANAWALA

1. "Our principal assumption throughout this essay is that the real scarcity in underdevoped countries is not the resources themslves . . . " (p. 88).

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THE ECONOMIC WEEKLY

SPECIAL NUMBER, JULY, 1959

CONTENTS

Special Articles

Charles Madge	A Sociologist Looks at Social Education.
Myron Weiner	Political Leadership in West Bengal : The Implications of Its Changing Pattern for Economic Development.
Bernard S. Cohn	Madhopur revisited.
A. K. Dasgupta	No 'No Profit No Loss' ?
Amartya Kumar Sen	Investment Allocation in Development Planning.
A. Rudra	Perspective Planning.
Arun Bose	The Economics of underdevelopment ; A Tentative Appraisal.
Solmon Adler	China's Great Leap Forward.
P. K. Ray	Glimpses of Ceylon's Economy.
I. S. Gulati	Light on Crucial Ratios.
George Rosen	Finance for the Organised Private Sector in the Third Plan.
Daniel Thorner	Ploughing the Plan Under.

And a Symposium on Co-operative Farming

R. F. Kothari	From Service to Farming Co-operatives.
Walter Hauser	Will the Peasant Accept It ?
S. K. Bhattacharyya	Case for Co-operative Farming.
Manmohan Singh	A Workable Operational Framework.
Nasim Ansari	Large Scale Farming Inevitable.
P. K. Mukherjee	Experiment Must Come First.

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INDEX TO THE INDIAN ECONOMIC JOURNAL

VOLUME VI

ARTICLES

	PAGE
BALAKRISHNA, R., The Estate Duty in India	163
BRAHMANANDA, P. R., A. C. Pigou (1877-1959)	466
BELSHAW, J. P., Gunnar Myrdal and Friedrich List on Economic Development	415
DESHPANDE, S. H., Labour Surpluses and Saving Potential in Underdeveloped Countries	376
ELLIS, H. S., The Affluent Society	327
GOPAL, M. H., Towards a Realistic Tax Policy for India	281
GOPAL, M. H., Taxation in a Developing Economy with special reference to the Indian Plans	16
GOPAL, M. H., The Social Survey—Its Role and Development with special reference to India	195
HART WALTERS, (Jr.) J., Distributing Fertilizers by Administrative Order in India ; An Example of Applied Economic Policy	443
HAZARI, R. K., Plurality as Underdevelopment	73
MORGAN, T., and CHOUDHRY, N. K., The Distribution of Income in Ceylon and the United States	438
NANJUNDAPPA, D. M., Debt Management as an Instrument of Employment Policy	359
PARTHASARATHY, G., Agricultural Price Stabilisation in the Context of Rapid Economic Development	456
POLAKOFF, M. E., A Re-evaluation of the Scarcity Postulate in the Light of Recent Theoretical Developments in the Social Sciences	1
RAMESH, M. S., Future of the Capital Gains Tax	217
ROSEN, G., Capital Markets and the Industrialization of Underdeveloped Economies	173
SACHS, IGNACY., A Note on Polish Industrialization—Its Results and Prospects	332
SENGUPTA, J. K., On the Relevance of the Sectoral Concept in the Theory of Economic Development	50
SHENOY, B. R., Professor Gadgil on Rephasing the Plan—A Reply... ...	62
SRI RAM, K. V., Contemporary Trends in European Co-operative Banking	31
SRI RAM, K. V., Recent Co-operative Banking Development in Asia ...	225
STERN, ROBERT M., Changes in the Structure of World Food Exports ...	342
WAGLE, S. S., Locational Industrial Matrix in Economic Planning ...	97

REVIEWS

Adler, Solomon, *The Chinece Economy.* By S. H. DESHPANDE	119
Agarwala, A. N., *Some Aspect of Economic Advancement of Underdeveloped Economies,* By S. A. Dave	396
Basu, S. K., *A Survey of Contemporary Banking Trends.* By C. K. SHAH ...	121
Bauer, P. T. & Yamey, B.S., *The Economics of Underdeveloped Countries* By SURENDRA DAVE	243
Bell, P. W., *The Sterling Area in the Post-War World.* By A. N. BHAGAT	134
Bonne, Alfred, *Studies in Economic Development.* By GEORGE ROSEN ...	488
Central Statistical Organization, *Charting Manual.* By J. C. RAO ...	490
Chamberlain, N. W., *A General Theory of Economic Process.* By R. K. HAZARI	122
Chatterji, A., *The Constitutional Development of India.* By C. M. KULKARNI	392
Davey, N. W., Kaltenborn, H. S. and Rutternberg, S. M., *New Dimensions in Collective Bargaining.* By S. D. PUNEKAR	490
Desai, N. B., *Report on the Administrative Survey of the Surat District.* By S. P. AIYAR	393
Ghosh, A., *Indian Economy—Its Nature and Problems.* By V. N. KOTHARI	123
Giri, V. V., *Labour Problems in Indian Industry.* By D. P. PANDIT	245
GUPTA, H. C., *Problems and Processes of Economic Planning in Underdeveloped Economies.* By S. H. DAVE	396

Gupta, Rajnarain and Mathur, R. N., *Development and Working of the Indian Constitution*. By R. SRINIVASAN 492
Gupta, S., *A Handbook of Indian Economies*. By V. N. KOTHARI ... 128
Hirschman, Albert D., *Strategy of Economic Development*. By N. V. SOVANI 494
Hunter, H., *Soviet Transportation Policy*. By Miss CHANDAVARKAR ... 250
KHUSRO, A. M., *Economic and Social Effects of Jagirdari Abolition and Land Reforms in Hyderabad*. By N. A. MAJUMDAR 124
Lalvani, K. C. (Ed.), *Indian Capital Market*. By KERSI D. DOODHA ... 405
Lefeber, Louis, *Allocation in Space—Production, Transport and Industrial Location*. By G. S. MADDALA 396
Leibenstein, Harvey, *Economic Backwardness and Economic Growth, Studies in the Theory of Economic Development*. By N. V. SOVANI 497
Lundberg, E., *Business Cycles and Economic Policy*. By J. C. RAO ... 394
Menegazzi, G., *Method and Foundations of Social Science*. By M. H. GOPAL 254
Misra, B. R., *Economic Aspects of the Indian Constitution*. By K. SUBRAMANYAM 398
Mukerjee, P. K., *Food Administration in Punjab and U.P.* By V. M. RAO 399
Mukherjee, K., *The Problems of Land Transfer*. By H. B. SHIVAMAGGI ... 127
Myers, Charles, A., *Industrial Relations in India*. By L. DESHPANDE ... 129
Narasimham, N. V. A., *A Short-Term Planning Model for India*. By J. C. RAO 132
Narayana, D. L., *Employment and Economic Development—A Study in Technical Aspects*. By H. C. GUPTA 499
NASH, M., *Machine Age Maya—The Industrialization of a Guatemalan Community*. By N. R. SHETH 390
National Council of Applied Economic Research, *Taxation and Foreign Investment*. By K. R. RANADIVE 592
PAREKH, H. T., *The Future of Joint Stock Enterprise in India*. By B. V. MEHTA 507
Patwardhan, V. S., *Food Control in Bombay Province*. By V. M. RAO ... 509
Polk, J., *Sterling : Its Meaning in World Finance*. By A. N. BHAGAT ... 134
Rama Sastri, J. V. S., *Nationalisation and the Managerial Role. A Theoretical Study*. By S. P. AIYAR 257
Reynolds, Lloyd, G. and Taft, C., *The Evolution of Wage Structure*. By M. C. MUNSHI 258
RICE, A. K., *Productivity and Social Organization*. By PHIROZE B. MEDORA 138
SARKAR, N. K., *The Demography of Ceylon*. By R. M. SUNDARAM 511
Sen, S. R., *The Economics of Sir James Stewart*. By S. N. SEN 260
Shackle, G. L. S., *Time in Economics*. By BHABATOSH DATTA 141
Shah, P. G., *The Dublas of Gujarat*. By B. V. PANDYA 144
Sicron, M., *Immigration to Israel* 1948-1953. By P. Y. CHINCHANKAR ... 261
Viner, J., *The Long View and the short : studies in Economic Theory and Policy*. By BHABATOSH DATTA 403
Wadia, P. A. and Merchan K. T., *Our Economic Problem*. By ALAK GHOSH 266
Walker, G., *Economic Planning by Programme and Control in Great Britain* (1945-50). By T. P. SUBRAMONIAN. 268

NOTES

ACHARYA, HEMALATA, "Not all that but only Sociology—A Reply to Dr. Mehta" 274
DESAI, B. C., "The Giri Approach in Industrial Relations" 155
Ezekiel, H., "Democratic Procedure in the Preparation of the Third Plan" 407
KISHORI LAL, "Process of Growth of National Income" 519
LAKDAWALA, D. T., AND KHAMBADKONE, M. V., "Rising Prices and Union Budget" 140
RAO, S. V., "Tariffs, Terms of Trade and the Distribution of National Income" 410
SAU, RANJIT, "A Note on the Disguised Unproductive Investment" ... 514
SHAH, C. H. "Production and Supply by Cash cum Subsistence Farmer—A Reply" 272